ABSTRACTS

ORAL PRESENTATIONS

[1]
Nail involvement in lichen planus

Magdalena Żychowska, Aleksandra Batycka-Baran, Wojciech Baran (Poland)

Lichen planus (LP) is an inflammatory mucocutaneous condition of unknown aetiology. There is limited literature reporting the characteristics of nail involvement in LP. To characterize the clinical features of nail involvement in patients with cutaneous LP. Seventy-five patients (29 men and 46 women; mean age = 53.3 years) with cutaneous LP were included in the study. All patients underwent complete physical examination. Onychomycosis was excluded. Nail lesions were present in 21 (28%) patients and were independent of age, sex, disease duration and the affected skin area. Isolated involvement of the fingernails was noted in 10 (47.6%) patients, whereas isolated involvement of the toenails was present in 4 (19%) patients. Seven (33.3%) patients presented with changes of the fingernails and toenails. All fingernails and toenails were implicated in 4 (19%) patients. Nine (42.9%) patients had concomitant mucous membrane involvement. The most common feature was nail plate thinning with longitudinal ridging (n = 14; 66.7%), followed by onycholysis (n = 4; 19%). Pterygium formation was observed in 3 (14.3%) patients. Patients with longitudinal ridging of the nail plates had higher serum concentration of high-sensitivity C-reactive protein (hsCRP), a risk factor of cardiovascular disease (3.2 vs 1.88g/l; $p < 0.05$). Nail involvement in LP is not rare. Further studies are needed to define the significance of nail changes and long-term prognosis.

[2]
The value of dermoscopy in differential diagnosis of non-melanoma nails abnormalities

Aleksandra Walczak, Anna Michalak-Stoma, Małgorzata Michalska-Jakubus, Dorota Krasowska (Poland)

Diagnosis of the pathology within nail plates is a difficult diagnostic issue due to limited view into the lesion as well as complex anatomical structure and problematic localization. The range of the possible causes of non-melanoma nail lesions is very wide and includes nails injuries, haematoma, pigmentation changes, abnormalities in the course of systemic diseases, birthmarks or other benign changes. Furthermore, in variety of systemic pathologies — changes within nails might occur as a key feature and help diagnose the underlying cause. Dermoscopy as a one of the most useful and reliable diagnostic tools in dermatology seems to be helpful procedure to establish appropriate diagnosis. Dermoscopy helps evaluate character of the abnormality and monitor the lesion. The aim of this study is to comprehensively assess different types of pathologic lesions within nails and present some of them with clinical and dermoscopic pictures.

[3]
UV nail lamps and the risk of acral skin tumors?

Justyna Mrówczyńska, Magdalena Misiak-Gałązka, Lidia Rudnicka (Poland)

Ultraviolet lamps are used in the nail industry, most commonly to dry and harden nail polish. They emit primarily UVA radiation. Since the World Health Organization classified the whole ultraviolet spectrum as a group 1 carcinogen to humans, their increasing use raises concerns regarding the risk of skin cancers. Possible cutaneous malignancy caused by exposure to UV radiation has come under scrutiny after two documented case reports demonstrating squamous cell carcinoma on the dorsum of hands in patients who regularly used UV nail lamps. However, a few recent studies quantified relatively low levels of UV light emitted by nail lamps and evaluated potential irradiation posing only small risk of skin cancers to humans. Typical exposure is 1–4 times monthly for durations of 6–10 minutes. Markova and Weinstock calculated UV irradiation equivalence in terms of narrowband UVB courses. More than 250 years of weekly UV nail treatments would be required to incur the same risk as a single course of narrowband UVB (corresponding to 15−30 treatments for 5−10 weeks). Up-to-date research indicates the risk of carcinogenesis associated with using UV nail lamps being marginally small. Further research is needed in this area to establish firmer conclusions.

[4]
Onychoscopic features of psoriasis

Joanna Golińska, Marta Sar-Pomian, Lidia Rudnicka (Poland)

Nail involvement is observed in 10−78% patients with psoriasis vulgaris. Isolated nail psoriasis is observed in 5−10% of cases. Our aim was to review literature data regarding onychoscopic features of psoriasis. An electronic search of three databases (Scopus, Web of Science and PubMed) was performed using the following search terms: psoriasis AND nail AND (dermoscopy OR videodermoscopy OR dermatoscopy OR videodermatoscopy OR onychoscopy OR "epiluminescence microscopy" OR "superficial microscopy"). A total of 5 original articles were included into the review. Common onychoscopic feature of psoriasis was nail pitting, occurring in 42% (11/46) to 58% (40/67) of patients. Onycholysis was observed in 22% (10/46) to 55% (37/67) of the cases. Splinter hemorrhages were seen in 11% (5/46) to 73% (49/67) of patients with nail psoriasis. Nail plate thickening, trachyonychia, transverse grooves and leukonychia were observed in 18% (12/67), 16% (11/67), 9% (6/67) and 6% (4/67) of the cases, respectively. Oil drop sign (salmon patches) was present in 4.3% (2/46) to 22.4% (15/67) of patients. Subungual hyperkeratosis was observed in 9% (6/67) of patients with nail psoriasis. In summary, the most common dermoscopic features of nail psoriasis are nail pitting, onycholysis and splinter hemorrhages. Unification of nomenclature is needed to provide precise data on the frequency of dermoscopic features of nail psoriasis.

[5]
Nail clipping histopathology and dermoscopy: the non-invasive methods in the diagnosis of onychomatricoma

Monika Bowszyc-Dmochowska, Tomasz Woźniak, Małgorzata Janicka-Jedyńska (Poland)

Onychomatricoma is a rare benign tumour of the nail matrix with distinct clinical and histological features. The single nail longitudinal pachyleukonychia is the typical clinical picture that includes thickening of the nail plate with longitudinal ridging, leukonychia or xanthonychia or even melanonychia along the entire length of the nail, splinter hemorrhages and transverse overcurvature of the nail plate. Onychomatricoma itself is visible after nail plate avulsion as a pedunculated and villous tumour growing from the nail matrix. Histopathology of the excised tumour gives the confirmation of the diagnosis. Onychomatricoma is a fibroepithelial tumor resembling hand in the glove with multiple finger-like projections of the cellular stroma covered with the matrix-type epithelium. The finger-like projections grow into the nail plate and leave longitudinal tunnels in the growing nail plate. The proximal end of the avulsed nail plate is thick and with its' holes resemble honey comb. While the above diagnosis of this benign tumour requires surgery of the nail matrix, we present the case in which the nail clipping non-invasive histopathology together with the clinical and dermoscopic features, helped to establish the diagnosis without the invasive nail matrix biopsy. The empty holes in the 1/3 ventral part of the nail plate in the transverse sections of the nail clipping taken from the distal edge of the plate were the diagnostic clue. The dermoscopy revealed the longitudinal parallel white or yellowish stripes and splinter hemorrhages, reflecting the longitudinal tunnels. The openings of the tunnels in the thickened free edge were also visible under the dermoscope.

[6]
Quality of life in 231 patients with psoriasis with reference to disease severity and nails involvement

Magdalena Pirowska, Anna Wojas-Pelc (Poland)

Psoriasis is a chronic inflammatory disease. The prevalence of nail involvement in psoriasis patients varies between 15% and 79%. Lesions localized in these areas can have a great influence on a patient's physical and psychosocial activities. The aim of the study was to analyse quality of life (QoL) of psoriatic patients with nail involvement. 231 patients with psoriasis from our dermatology clinic were enrolled in a trial. They were divided into three groups based on the severity of psoriasis as denoted by their BSA score (mild psoriasis < 3%, moderate 3−10%, severe > 10%) with or without nail involvement. Statistical analysis was carried out to compare the means between groups and ANOVA analysis of variance to compare the impact of quality of life on patients with and without nail disorders. QoL was statistically significantly more affected in patients having

onycholysis and subungual hyperkeratosis. QoL of patients with mild psoriasis and nails involvement was similar to QoL of patients with severe psoriasis. There was no statistically significant difference on the QoL impact between number of nails involved. In conclusion, appearance of the nail psoriasis has a more significant impact on QoL than the severity of the skin disorder.

[7]

Epidemiology, clinical presentation and dermoscopic features of malignant tumours of the nail apparatus – the records from Department of Dermatology, Venerology and Allergology in Gdansk

Michał Sobjanek, Martyna Sławińska, Alicja Romaszkiewicz, Wojciech Biernat, Roman J. Nowicki (Poland)

Malignant neoplasms of nail apparatus are rare tumours, often diagnosed with delay which influences the further prognosis. The most common are nail apparatus melanoma and squamous cell carcinoma. The role of dermoscopy of the nail apparatus (onychoscopy) is constantly increasing. It improves the clinical differentiation of benign and malignant conditions of the nail apparatus, patients' follow up and defining the margins during surgical intervention (intraoperative onychoscopy). Herein we present another series of Polish patients with malignant tumours of nail apparatus with dermoscopy. We present epidemiological, clinical and dermoscopic analysis of patients with malignant tumours of the nail apparatus diagnosed and treated in Department of Dermatology, Venerology and Allergology, Medical University of Gdansk (Poland) between January 2015 and November 2017. The risk of malignant tumours of nail apparatus appears to be relatively low. Dermoscopy supports the clinical differentiation between benign and malignant disorders of nail apparatus, but should be always interpreted together with medical history and physical examination. Histopathological examination remains the gold standard in diagnosis of malignant tumours of the nail unit.

[8]

Porocarcinoma of the nail – the first dermoscopic observation of the rare tumour of the nail apparatus

Michał Sobjanek, Martyna Sławińska, Anna Zaryczańska, Alicja Romaszkiewicz, Kamil Drucis, Roman J. Nowicki, Wojciech Biernat (Poland)

Porocarcinoma is a rare malignant eccrine neoplasm, most commonly located on the legs, trunk and scalp, which represent about 0.005% of cutaneous neoplasia. It may present as a nodule, plaque or polypoid growth with or without ulceration. The presence of porocarcinoma of the nail apparatus is extremely rare — the final diagnosis is made based on histopathological examination. An 81-year-old woman presented with asymptomatic pink tumour of the nail apparatus of the right great toe. The lesion occurred several years before and was slowly growing. The patient reported preceding trauma of the affected site. Dermoscopy showed the presence of polymorphic, clustered vessels on the white-pinkish background. In conduction anaesthesia, after surgical avulsion of the nail plate, the tumour has been excised. Based on histopathological examination the diagnosis of porocarcinoma was made. Porocarcinoma of the nail is extremely rare, with only 6 cases reported so far. To the best of our knowledge, onychoscopic presentation of porocarcinoma has not been previously described.

[9]

Dermoscopy of onychomycosis and its correlation with the causative organism

Reham El-Zawahry, Mohamed Habib, Hoda Moneib, Mona Atef (Egypt)

Dermoscopy is a safe, rapid, non- invasive diagnostic tool used mainly to diagnose pigmented lesions and wide variety of cutaneous disorders. Nail dermoscopy (onychoscopy) is now becoming more and more frequently utilized for the diagnosis of neoplastic and non-neoplastic (inflammatory and infectious) nail disorders. We conducted a comparative cross-sectional study on 50 patients, with 132 affected nails. Clinical and mycological examination was done to confirm the presence of onychomycosis with these patients. Further evaluation was done by dermoscopy. The most common organisms which were isolated in culture were NDM (specifically Aspergillus niger) (88%) and Yeast (Candida) (12%). Results showed presence of 7 clinical patterns of onychomycosis: total dystrophic onychomycosis (TDO) was the major clinical pattern present in 28% of patients, followed by the distal subungual onychomycosis (DSO) type 24%, distolateral subungual onychomycosis (DLSO) 20%, candida onychomycosis (CO) 10%, lateral subungual onychomycosis (LSO) 8%, proximal subungual onychomycosis (PSO) 4% and longitudinal melanonychia pattern (melanoychia striata) 4%. There was no significance of dermoscopic features of onychomycosis with a specific causative organism regarding Aspergillus niger or Candida. Hence, there is no correlation between a specific dermoscopic pattern for onychomycosis that is caused by a specific causative organism, and all patterns can be seen with all fungal species. The presence of longitudinal melanonychia onychomycosis pattern, suggests either onychomycosis can be present on top of a melanocytic nevi or that NDM can produce longitudinal pigmentation in the nail plate as a specific dermoscopic feature for it. Suggesting a new rise to a new variation in the appearance of onychomycosis cause by Aspergillus niger species to produce melanonychia striata pattern in the nail. Yet, dermoscopy showed 3 confirmatory signs for onychomycosis; spikes, whitish yellow longitudinal striations and/or chromonychia (aurora borealis), but there was no significant difference between the causative organism (Aspergillus niger or Candida) and their dermoscopic feature. Onychomycosis can be caused by dermatophytes (DM), yeasts or non-dermatophytes (NDM). The main clinical patterns are: DLSO, PSO, SWO, EO, TDO, CO and fungal melanonychia. Dermoscopy aids in the diagnosis of onychomycosis through specific signs. In the present study, there were three dermoscopic signs that were diagnostic for onychomycosis. Hence, these findings are found to be as specific dermoscopic signs 100% diagnostic for patients with onychomycosis, but still these signs can be present in all fungal species that cause onychomycosis and so, we concluded that there is no specific dermoscopic signs was detected regarding a specific causative organism, and all patterns can be seen with all fungal species. Onychomycosis can be present on top of a melanocytic nevi. Aspergillus niger (NDM) can produce longitudinal pigmentation (melanonychia striata) in the nail plate as a specific dermoscopic feature for it. In conclusion, there is no correlation between a specific dermoscopic pattern for onychomycosis that is caused by a specific causative organism, and all patterns can be seen with all fungal species. Regarding longitudinal melanonych-

ia, we conclude 2 theories: either onychomycosis can be present on top of a melanocytic nevi or that NDM (Aspergillus niger specifically) can produce longitudinal pigmentation in the nail plate as a specific new dermoscopic feature for it.

[10]
Yellow nail syndrome

Monika Siedlecka, Joanna Czuwara, Anna Skrok, Joanna Misiewicz-Wroniak, Lidia Rudnicka (Poland)

Yellow nail syndrome is a rare disease, characterized by yellow nail discoloration, pulmonary manifestations and/or lymphedema. Etiopathogenesis remains unknown, however, lymphatic and microvascular dysfunction are frequently hypothesized. The disease is usually isolated, but coincidence with autoimmune and neoplastic disorders was reported. No specific treatment is available, but biotin and tocopherol, especially when associated with triazole antifungals, have shown effectiveness in some cases. Successful treatment of the underlying illness could influence and improve nail changes. Finally, spontaneous remissions are observed. We present a case of a 65-year-old woman with yellow discoloration, dystrophy and slow growth of all 20 nails of four-year duration. Nail changes were irresponsive to systemic treatment with itraconazole and terbinafine, and coexisted with persistent pitting edema of lower limbs as well as persistent cough, chronic maxillary sinusitis, bronchiectasis and ground glass opacity areas in computed tomography chest scans. Onychomycosis was ruled out and characteristic vascular changes suggesting connective tissue disease were not observed in dermoscopy. Moreover, type 2 diabetes mellitus was diagnosed. As other reasons of yellow nail discoloration were excluded, clinical diagnosis of the yellow nail syndrome was established. The patient was treated with itraconazole pulse therapy, biotin, tocopherol, zinc supplementation and topical glucocorticosteroids for 6 months, without any improvement. In conclusion, diagnosis of yellow nail syndrome may not be straightforward as the differential diagnosis is broad. The long-term outcome of this syndrome is variable, that is why thorough interdisciplinary evaluation and clinical follow-up are indicated.

[11]
Nail dyspigmentation following hydroxyurea therapy

Shilpi Agarwal (India)

The nails are a window to the health of an individual. They provide a clue to the presence of many systemic conditions such as infections, poisoning etc. We present herewith one such case. A 19-years-old male with sickle cell anemia was referred for asymptomatic discoloration of the nails for 15 days prior to presentation. He was admitted by the physician for acute onset of paraplegia, which was diagnosed as Guillain-Barré syndrome. He was given intravenous immunoglobulin for the same and had responded well. He gave a history of taking Hydroxyurea 500 mg BD since the past 4 months for his sickle cell anemia. Clinical examination revealed a bluish discoloration of the nail plates, including the lunulae with broad white bands on the distal part. The cuticles and nail folds were normal. His haemoglobin was 11 g/dl, with indices suggesting megaloblastic change. Liver function and renal function tests, including serum proteins were normal. He was prescribed folate and B_{12} supplementation. Hydroxyurea is known to cause nail discoloration. However, the nail changes described above are not commonly reported with its use.

[12]
Dermoscopic findings of onychopathies in housewives in Mumbai. A series of 200 patients

Amit Kerure (India)

Onychopathies constitute one of the major challenges faced by a dermatologist in terms of early detection and diagnosis. Utility of dermoscope as a tool for detection is increasing and its use in onychopathies needs to be explored. An Indian housewife is vulnerable to many onychopathies due to the routine culinary practices as well as routine house works which involves frequent contact with water and irritants like soaps and detergents. These practices can cause many nail disorders along with in general nail diseases. The aim was studying dermoscopic features of nail abnormalities in Indian housewives and their correlation with their lifestyle. Also the aim of this study was to analyze early detection and the diagnosis as well as prognosis of the nail disease.

It was a cross sectional epidemiological study conducted at 2 centers simultaneously in Navi Mumbai. Study was conducted over a period of 6 months i.e., from 1st June 2017 to 1st December 2017. A total of 200 housewives aged from 25−55 years old and had some nail abnormalities were recruited. Dermoscopy was performed to confirm clinical diagnosis and patients were treated for the same. Patients were called for routine follow ups. dermoscopic pictures of onychopathies were taken during the first visit as well as follow ups. Examination of the nail was done using a contact dermoscope and a video dermoscope. Indian housewives suffer from many onychopathies. Many of these may remain undiagnosed or neglected. Dermoscopy is a noninvasive, quickly applied and inexpensive test that may aid diagnosis many onychopathies. Subclinical lesions can be appreciated well with the help of a dermoscope and appropriate treatment can be instituted in the early phase of the disease.

[13]
Congenital malalignment of the great toenails

Anna Matuszewska (Poland)

Congenital malalignment of the great toenails is a rare, heritable disorder, mostly diagnosed in early childhood. Toenails show thickening, yellowish discoloration and, what is most characteristic, lateral deviation of the nail matrix resulting in the nails' plate angular lateral growth. These alterations in nails' appearance can mimic onychomycosis, what is rather unlikely in toddlers, and can lead to mistaken antifungal treatment. There are some hypothesis explaining potential reasons for this disorder. Exogenous factors, such as intrauterine pressure, vascular insult during fetal life, or desynchronization of growth between the nail and end-phalanx can play a role in etiology. In my presentation I would like to report a healthy three years old boy with congenital malalignment of the great toenails, initially treated by pediatrician with ciclopirox nail polish, with no improvement. Both nails of the first toes showed yellow discoloration, thickening, and triangular shape. The nails were curved and had transversal ridges. Mother reported delayed growth of these nails, urging her to cut them no sooner, then every three to four months. Having explained to the mother the nature of the disorder, a wait and see approach was suggested. On two and a half years long follow up revealed discreate improvement in appearance of the affected nails. The diagnosis of this condition is based on the anamnesis, physical appearance and exclusion of coexisting dermatophyte or yeast infections. If there is no history of trauma to the toenails, fungal culture is negative and characteristic deviation of the nail matrix is observed, this inherited condition should be taken into consideration.

[14]
Onychoscopy as a useful tool in diagnosing Darier's disease

Agata Szykut, Justyna Skibińska, Marta Sar-Pomian, Małgorzata Olszewska, Lidia Rudnicka (Poland)

Darier's disease is a rare autosomal dominant genodermatosis. It can be characterized with hyperkeratotic papules and plaques affecting the seborrheic areas. Nail involvement is observed in about 92% of the cases. Usually longitudinal red and white bands and notching of the free edges of the nail plates are observed. The aim of this case report was to present onychoscopic features of Darier's disease. A 20-year-old man presented with a 5-year history of keratotic follicular papules localized on the upper chest and both sides of the neck. Split and thinning of the distal parts of the finger nail plates were observed. Dermoscopy of the skin lesions revealed polygonal yellowish-brownish areas surrounded by a whitish halo. Onychoscopy of finger nail plates showed alternating red and white longitudinal bands and V-shaped notches at the distal nail edges. The histopathology of the skin lesion showed acantholysis, parakeratosis and dyskeratosis with characteristic corps ronds and grains which was consistent with Darier's disease. Onychoscopy, features, such as multiple red and white longitudinal bands resembling "candy canes" and V-shaped indentation of the distal margin of nail plates (known as V-shaped notch) may be helpful in diagnosing nail changes in the course of Darier's disease.

[15]
Progressive nail changes as the initial sign of multiple myeloma-associated systemic amyloidosis

Piotr Parcheta, Elżbieta Kłujszo, Jacek Zdybski, Joanna Czuwara, Beata Kręcisz (Poland)

Secondary amyloidosis can involve skin and nails in one-third of patients, including those with the myeloma-associated form. We report a case of a 61-year-old man presenting with progressive nail changes as initial dermatologic sign. All 20 fingernails were involved. His nail was thin and brittle, with longitudinal ridging and distal onychoschizia. Patient noticed changes 2 years prior. Subsequently he presented generalized weakness, joint pain, erectile dysfunction. Skin changes purpura, petechiae and ecchymoses on the forearms, intertrigo like changes on the buttocks. Initial workup didn't show any changes, serum protein electrophoresis was within normal range. Nail matrix biopsy and skin biopsy from the buttocks was inconclusive Due to nonspecific symptoms, it was decided to consult histopathology for amyloidosis. Histopathological studies of biopsy specimen from the nail matrix but not from the buttock revealed deposition of amyloid. Subsequent workup did show monoclonal free lambda light chain. The patient was referred to the hematology department.

Non-specific nail changes should trigger diagnostic alertness. In doubtful cases, a biopsy and a serum protein electrophoresis are necessary.

[16]
Nail damage mimicking psoriasis induced by contact allergy from (meth)acrylates

Sylwia Cyran-Stemplewska, Beata Kręcisz (Poland)

Allergic contact dermatitis from (meth)acrylates has been increasingly described in occupational and non-occupational exposure to long lasting nail polish kits.

We present a 24 -year-old female patient, admitted to Department of Dermatology in Kielce to diagnose hand nail changes: hyperkeratosis, onycholysis and pitting with hyperkeratosis and erosions of the distal part of the fingers. They have appeared few months after she had stopped using long-lasting nail polish, but she was constantly using eyelash extension with acrylates. The mycological test was negative, punch biopsy of the nail has not revealed psoriatic lesions. The patient reacted strongly to 2-hydroxyethyl methacrylate and nickel in patch tests. After using topical corticosteroids and elimination of exposure for other acrylates, nail changes reduced.

Contact allergy for acrylates is more common in population because of their presence in wild range products including medicine and cosmetics. Nail damage can imitate other nail diseases like psoriasis and onychomycosis and it should be always taken into consideration during differential diagnosis.

[17]
Alopecia areata totalis associated with nails lesions – good response to treatment

Marta Jaworska, Piotr Parcheta, Elżbieta Kłujszo, Beata Kręcisz (Poland)

Alopecia areata is a recurrent nonscarring type of hair loss that can affect any hair-bearing area and can manifest in many different patterns. One of that pattern is alopecia totalis which occurs as totally baldness of the scalp. Nail involvement, predominantly of the fingernails, is found in 6.8−49.4% of patients, most commonly in severe cases. 42-years old patient was admitted to our Department due to alopecia totalis with associated fingernails involvement. The disease has started about ten years ago with eyebrows, eyelashes and beard loss. He has had total baldness for one year. He decided to start treatment only because of ridged, pitted and brittle appearance of the hand nails which has started six months ago. In laboratory tests there was elevated level of anti-TG and anti-TPO antibody and hyperlipidemia. We started the systemic treatment with methotrexate 15 mg per week and triamcinolone 8 mg per day with associated topical treatment. After 2 months of that treatment we observed partial regrowth of normal hair on the scalp, within the eyebrow area, eyelashes, beard and significant improvement within the nails, and after four months the regrowth was total and the nails were clear. The patient is now in our observation on the maintaining treatment. Associated systemic treatment is the best way of treatment of severe cases of alopecia areata especially with nails involvement.

[18]

Transverse leukonychia (Mees lines) as a cosmetically induced nail disorder

Paweł Pietkiewicz, Justyna Gornowicz-Porowska, Paweł Bartkiewicz, Monika Bowszyc-Dmochowska, Marian Dmochowski (Poland)

Mees lines (leukonychia striata) are rare transverse linear discolorations forming white parallel bands, usually uniformly affecting all the fingernails. Although commonly associated with heavy metal poisoning (e.g. arsenic, thallium, lead), diverse causes were suggested a plausible cause of this entity: acute renal failure, heart failure, ulcerative colitis, breast cancer, infections (measles, tuberculosis), systemic lupus erythematosus as well as microtrauma. Constant development of nail cosmetic procedures brings on new, previously unseen links. Gel manicure systems become more and more popular among last decade. As a variant of acrylic nail gel manicure, the base requires UV LED lamp to evaporate the solvent and solidify the artificial gel nail. Onychoschisia is the commonest sequella reported after this procedure. Here we report a patient with Mees lines caused by this procedure. As laboratory tests did not support any internal diseases as well as heavy metal poisoning, we suspect a UV light as a repetitive microtraumatic factor disrupting nail matrix growth. To our best knowledge this is a first report of such, probably underreported, association.

[19]

Successful treatment of facial papules in frontal fibrosing alopecia with oral isotretinoin

Rodrigo Pirmez, Taynara Barreto,
Bruna Duque-Estrada, Danielle Quintella, Tullia Cuzzi
(Brazil)

Frontal fibrosing alopecia (FFA) was first described in 1994 and is now regarded as a growing epidemic by several authors. Facial papules (FP) were reported in FFA patients in 2007 and considered as a sign of facial vellus hair follicle involvement by the disease. In a recent study, our group observed that histopathological features of facial papules might not be limited to perifollicular inflammation. Prominent sebaceous lobules with dilated ducts associated with an abnormal elastic framework seem to be the main explanation for the formation of facial papules in the context of FFA. No effective treatments have been described for FP in FFA patients. To evaluate oral isotretinoin, a drug known to cause atrophy of sebaceous glands, in the treatment of facial papules in FFA patients. Three patients with FFA with prominent facial papules were given oral isotretinoin for three months. At the end of the third month, FP had completed disappeared or were considered minimal in all patients studied. No effective treatments for FP in FFA patients have been described in previous studies. Our study is the first to show that oral isotretinoin may be a therapeutic option for facial papules.

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[20]

Facial papules in frontal fibrosing alopecia: beyond vellus hair follicle involvement

Rodrigo Pirmez, Taynara Barreto,
Bruna Duque-Estrada, Danielle Quintella, Tullia Cuzzi
(Brazil)

Frontal fibrosing alopecia (FFA) is considered a variant of lichen planopilaris affecting mainly the frontotemporal hairline. Since the first report in 1994, several other clinical features have been associated with the disease, such as facial papules (FP). Even though FP have been linked to facial vellus hair follicle involvement, how this finding alone could lead to the formation of clinically evident FP in FFA patients has not been addressed. Cutaneous FP biopsies of FFA patients performed between January 2016 to May 2017 were retrieved from our pathology database and reexamined by two pathologists. Histological sections of thirteen 3.0-mm punch biopsy specimens from seven patients demonstrated prominent sebaceous glands in 11 specimens and dilated sebaceous ducts in 10. Pinkus acid orcein staining revealed reduction and fragmentation of elastic fibers in 12 samples. In seven of these, this finding was observed both in papillary dermis and reticular dermis, especially around sebaceous lobules. Vellus hair follicle involvement was seen in two samples only. Prominent sebaceous lobules with dilated ducts associated with an abnormal elastic framework seem to be the main explanation for the formation of facial papules in the context of FFA.

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[21]

Controversy about platelet rich plasma in hair loss

Joanna Czuwara, Adriana Rakowska, Lidia Rudnicka
(Poland)

Platelet rich plasma (PRP) use in esthetic medicine is growing up, including alopecia treatment. Platelets are a source of autologous growth factors such as TGF-b1, TGF-b2, PDGF isoforms, VEGF, EGF and bFGF. Main platelets function is to close injured blood vessel and stimulating wound healing. Therefore, growth factors they release interplay between endothelium, fibroblasts and epithelial cells. Literature gives many examples of PRP use in different types of non-scarring hair loss. Whether PRP can be considered as a potential treatment tool for hair loss is still a matter of debate. Recent review article (Ayatollahi A. 2017) stresses out that available evidence had shown low quality and controversial results about the efficacy of PRP in nonscarring alopecias, such as androgenetic alopecia (AGA). We also saw several cases of worsened AGA after every two weeks performed PRP procedure on the scalp. So far there is no standard protocol regarding the number and interval of treatment sessions, number of platelets, method of platelet preservation or activation, and depth of PRP injections. Needless to say, some growth factors activate hair follicles, whilst the others show opposite effect, e.g. TGF-b1 and TGF-b2 are involved in androgen driven progression of baldness in a ROS dependent way. In summary, the efficacy of PRP in AGA treatment has not been proven yet. Dermatologists who use PRP as a method for AGA

treatment, should be aware that TGF-b is induced by androgens and inhibits follicular epithelial cell growth. Therefore, PRP could be more reasonable as adjunctive therapy with 5a-reductase inhibitors, antioxidant supplementation and longer intervals between PRP injections in androgenetic alopecia, as research data suggest.

[22]
Langerhans cells as a histologic marker of proper treatment response to hydroxychloroquine in patients with frontal fibrosing alopecia

Maciej Pastuszczak, Magdalena Wawrzynkiewicz, Grzegorz Dyduch, Anna Wojas-Pelc (Poland)

Frontal fibrosing alopecia (FFA) is a disorder characterized by progressive cicatricial alopecia with poor treatment response. The presence of lymphocytic infiltrate within the bulge area is a typical histopathological finding in FFA. Some recent studies have found however Langerhans cells as a part of the infiltrate composition. Hydroxychloroquine (HCQ) is one of the recommended systemic treatment for FFA. The mechanism of action is unclear. Presumably, the drug by decreasing TLR signaling, reduces the activation of dendritic cells and the inflammatory process. Interestingly, not every patient with FFA responses properly to HCQ therapy. The aim of the current study was to assess the correlation between histological findings in patients with FFA and response to HCQ treatment. There were 12 female patients with FFA included. All of them were previously treated only with topical medication with no evidence of disease stabilization (i.e. progressing hair loss in the frontal hair line and persistence of perifollicular hyperkeratosis with a rim of surrounding erythema). In all patients, the skin biopsy has been taken for further histopathological and immunohistochemistry examination and the therapy with HCQ has been initiated (200 mg *p.o. q.d*). After a 9-month treatment period, only 5 of 12 women established stabilization of the disease (defined as above). In all of them, the pre-treatment number of CD1+ cells (Langerhans cells) within the bulge infiltration was more than 12%. Interestingly, in patients with no disease stabilization after HCQ treatment, the pre-treatment number of CD1+ cells did not exceed 5%. The pre-treatment number of Langerhans cells may be a useful marker of proper response to HCQ treatment in patients with FFA (especially in those with no response to topical therapy).

[23]
Hair abnormalities associated with epidermal growth factor receptor targeted therapy

Anna Stochmal, Marta Sar-Pomian, Lidia Rudnicka (Poland)

Epidermal growth factor receptor (EGFR) inhibitors are anticancer agents that inhibit tumor growth by acting on EGFR signaling transduction pathways. EGFR is also an important regulator of the hair growth. Several hair abnormalities associated with EGFR inhibitors have been reported to date. An electronic search of three databases (PubMed, Scopus and Web of Science) was performed in January 2018 using the following search terms: EGFR inhibitors AND (scalp OR hair OR alopecia OR hypertrichosis OR hirsutism OR trichomegaly). A total of 52 articles were included. Seventeen cases of nonscarring alopecia associated with erlotinib (n = 10), cetuximab (n = 5), gefitinib (n = 1) and panitumumab (n = 1) were reported. Scarring alopecia was described in 8 patients treated with gefitinib (n = 3), erlotinib (n = 3), trastuzumab (n = 1) and lapatinib (n = 1), including single cases of tufted hair follicles and folliculitis decalvans. Excessive hair growth has also been associated with anti-EGFR therapy. Trichomegaly has been described in a total of 83 cases to date and was mostly associated with erlotinib (n = 43) and cetuximab (n = 30) treatment. Erlotinib was also reported to cause hypertrichosis, hirsutism and eyebrows elongation. Epidermal growth receptor inhibitors may cause both non-scarring and scarring hair loss. On the contrary, they may cause excessive growth of the eyelashes and eyebrows. The mechanism of hair abnormalities induced by EGFR inhibitors in unclear. It remains controversial whether hair abnormalities can be a marker of either positive or negative response to anti-EGFR therapy.

[24]

Alopecia areata – hyperactivity of the hypothalamic-pituitary-adrenal axis is a myth?

Beata Bergler-Czop, Ligia Brzezińska-Wcisło, Bartosz Miziołek (Poland)

Psychological stress is known to cause exacerbation of different skin diseases such as prurigo, acne, psoriasis, atopic dermatitis and its significance has been widely investigated in alopecia areata (AA). An exposure to psychological stress can act as triggering or exacerbating factor for AA. The aim of the study was to compare trends in production of MSH and cortisol in patients with alopecia areata and healthy controls. A total of 43 patients with AA and 37 healthy individuals were selected from the Dermatology Outpatient Clinic in Katowice at Silesian School of Medicine, Poland. MSH levels were evaluated by ELISA kits. Plasma cortisol levels were measured by radioimmunoassay at automatic with reagents provided by DIAsource ImmunoAssays. MSH Mean plasma level of MSH was 5.39 ng/ml in AA-patients and 5.71 ng/ml in healthy controls. Test showed statistically nonsignificant difference in mean plasma MSH levels between AA-patients and healthy controls (p = 0.435). Cortisol Laboratory measurements revealed higher plasma levels of cortisol = 157.63 ±91.16 μg/l in AA- patients than in healthy controls = 123.32 ±71.28 μg/l, but a difference between two groups was statistically (t-Student test) nonsignificant (p = 0.063). Expectations of disturbances in production of MSH and cortisol were not fulfilled. Neither MSH nor cortisol plasma levels appear to be clearly changed in AA-patients. There could be however noticed some tendencies to low values of plasma MSH in AA patients predominately in males. Additionally, although differences were nonsignificant also for plasma cortisol, some tendency towards greater cortisol production could be noticeable in AA settings.

[25]

Stepwise approach of hair fall disorders

Ahmed Sadek, Dalia Hossam (Egypt)

Hair problems have a great impact on patient's quality of life. They significantly affect patient's self-confidence and self-esteem. Approach to a patient with hair problem requires identification of patient's main complaint whether hair loss or diminished hair quality or others. Proper history taking including onset, duration, precipitating factors and associated co-morbidities could lead to identification of the underlying disorder. The value of bed side tests and the new imaging devices including; hair pull test, hair tug test, trichogram, trichoscopy and wood's light in diagnosis of different hair and scalp disorders is discussed in this article. Bed side tests and the new imaging devices have markedly improved the accuracy of diagnosis of different hair and scalp disorders hence reduced the need for biopsy. In patients suffering from hair loss either generalized or localized, full history is required including; onset, course, duration, preceding precipitating factors, drugs, hair styling practices, associated co-morbidities and autoimmune diseases. Clinical examination of scalp texture, distribution of hair loss, other signs e.g. scales, pustules, hair tufts, associated nail and teeth abnormalities should be reviewed. Hair pull test and trichoscopy are simple noninvasive techniques that help to confirm the diagnosis and monitor disease progression. KOH examination, fungal culture and wood's light are used as additional tests in cases with suspected tinea capitis. Histopathological examination is mandatory if all the previous steps failed to reach the definite diagnosis. In patients with patterned hair loss, the same steps are followed for diagnosis and monitoring with special concerns regarding history of menstrual irregularities and infertility, other features of SAHA syndrome and virilization detected by clinical examination and abnormalities in hormonal profile e.g. Serum and free testosterone, dehydroepiandrosterone sulfate and prolactin. In hair quality problems, history of styling practices, hair cosmetics use e.g. straighteners, associated nail and teeth affection and family history of similar conditions data should be fulfilled. Clinical examination is important to identify hair fragility and review of other systems according to the defect suspected. Dermoscopy with high magnification, light or polarized microscopy are needed to identify the defect. Additional laboratory tests and genetic testing are sometimes used to confirm the diagnosis. We offer an algorithmic approach and a checklist for full assessment of cases suffering from different clinical patterns of hair loss.

[26]
Injectable betamethasone as a therapeutic option in alopecia areata

Daniel Melo, Thaisa Dutra, Vanessa Baggieri, Violeta Tortelly (Brazil)

Alopecia areata is an inflammatory disease of the hair follicles whose first line of treatment in adults with less than 50% of the affected scalp is intralesional corticosteroid therapy. Triamcinolone acetonide is the most widely used injectable corticoid in the world. In Brazil, due to its absence, triamcinolone hexacetonide is used, although it is off-label indication for dermatological use. The objective of this article is to consider the use of intralesional betamethasone as an alternative to triamcinolone in the treatment of alopecia areata, as it is a low-cost medication, easy to access and with a dermatological indication formalized. A comparative study between triamcinolone and intralesional betamethasone for the treatment of oral lichen planus shown greater efficacy and less return of lesions with the use of betamethasone. The authors opted for the use of betamethasone in the form of 5 mg/mL betamethasone dipropionate associated with betamethasone 2 mg/ml disodium phosphate, with a dose equivalent to the concentration of 2.5 mg/ml of triamcinolone acetonide, with infiltration of 0.1 ml per stitch, in the intradermal plane, with spacing of 0.5–1 cm between punctures. In almost a decade of experience, satisfactory re-epilation has been observed in most cases, in a proportion similar to that described in the triamcinolone acetonide studies and is therefore a good option to be considered as an alternative to triamcinolone in the intralesional treatment of alopecia areata.

[27]
Sulfotransferase activity levels in plucked hair follicles of androgenic alopecia patients in Indian subcontinent

Jill Chitalia, Rachita Dhurat (India)

Several studies established that sulfotransferase enzyme activity in the outer root sheath of plucked hair follicles predicts response to topical minoxidil in the treatment of pattern hair loss; however, the prevalence of this enzyme activity among Indian patients has not been studied. Also, to-date no reports in the literature characterize sulfortransferase activity based on sex, age, duration of hair loss, grade of hair loss and family history. In this study, utilizing the novel sulfotransferase activity assay first reported by Goren *et al.*, we characterize the sulfotransferase in 120 patients of pattern hair loss visiting a dermatology outpatient clinic in India. A total of 120 patients above 18 years of age clinically diagnosed with patterned hair loss treated or untreated were included in the study after obtaining informed consent. Patients not willing to give informed consent or diagnosed with any other hair disorders were excluded from the study. A total of 75 men and 45 women were recruited. 8 to 10 hair samples were plucked with the help of tweezers from the border between the most prominent area of thinning and non-thinning at the vertex/mid-scalp and inspected visually for an intact bulb. Suitable anagen hairs were processed for sulfotransferase assay analysis. Demographic data, family history, duration and clinical grade of AGA, previous treatment taken (if any) and patient outcome assessment were recorded. Overall, 40.83% of patients with AGA had low level of sulfotransferase. Surprisingly, 49.3% of men had low levels of sulfotransferase vs. 26.6% of women. No correlation was found between sulfotransferase activity and age, duration of hair loss, grade of hair loss, or family history. Our study shows high prevalence of patients having low levels of sulfotransferase activity in Indian population. Thus, it is high time to reconsider minoxidil as monotherapy for patterned hair loss. Sulfotransferase activity assay before commencement of therapy would be of great help in ruling out non-responders and also prescribing the accurate dose of minoxidil to AGA patients. Our study is first of its kind to characterize sulfotransferase activity levels. Our study is first to be conducted in Indian population.

[28]
Retrospective analysis of diphencyprone in pediatric patients of alopecia areata

Nitya Malladi, Siddhi Chikhalkar, Uday Khopkar, Vikram Lahoria, Vidya Kharkar (India)

Alopecia areata is a form of non-scarring hair loss with autoimmune conditions and inflammation. Multifocal patchy alopecia areata, alopecia totalis and alopecia universalis are often refractory to the intralesional and systemic therapy. Topical immuno-

therapy is the method of application of contact allergens. The aim of the study was to study the efficacy of diphenylcyclopropenone (DPCP) for moderate to severe alopecia areata, alopecia totalis and alopecia universalis in pediatric population. To assess and correlate the response and the prognostic factors. Study design — retrospective analysis of 21 pediatric patients of with moderate to severe alopecia areata.

After an informed consent, the patients were sensitized with 2% DPCP in acetone applied over 2 cm × 2 cm patch over scalp or back. Treatment was started with lowest concentration of 0.0001% and increased stepwise. The application of DPCP was repeated at weekly intervals. The response is graded as no response, minimal, moderate, good and excellent. Any correlation of the response and the prognostic factors was assessed. About 55% of patients showed good to excellent response of hair but the response was variable when associated with bad prognostic factors. Patients with Downs syndrome and ophiatic pattern had a minimal to moderate response. Local side effects such as vesiculation, crusting dyspigmentation, id eruption were noted. Diphencyprone (DPCP) is a contact allergen which is not mutagenic in the Ames test unlike DNCB. Compared with squaric acid dibutylester, diphencyprone is more stable and thus more suitable for storage when dissolved in acetone. Systemic immunosuppressants in children can lead to systemic side effects and also effect the growth in pediatric population. DPCP is a safe and useful therapy for moderate to severe cases of alopecia areata with only few local side effects noted. Long term studies should be carried out to establish the rate of relapse and to assess if any long-term complications.

[29]
A randomized controlled study detailing the role and efficacy of growth factors in platelet rich plasma in patterned alopecia in one hundred male patients

Aseem Sharma, Rahul Ray (India)

The gold standard, FDA-approved topical therapeutic modality for androgenetic alopecia (AGA) — Minoxidil, shows modest efficacy, between 40 and 60%, with variable compliance rates, as per Cochrane reviews. Platelet-Rich Plasma (PRP) augments response rate and patient compliance, to Minoxidil. Platelet-derived, vascular endothelial, fibroblast and epidermal growth factors trigger dermal Wnt, Shh, Notch and β-Catenin signaling pathways to stimulate hair follicle morphogenesis. This study evaluates the efficacy of PRP with Minoxidil, versus Minoxidil monotherapy in patterned alopecia. This randomized, controlled study was conducted at the Dermatology department of a military tertiary care hospital over two years. Hundred eligible men with AGA were selected and classified as per Hamilton-Norwood grading, and divided randomly into 2 treatment arms (50 each): group A (M + PRP): received monthly intradermal PRP for 6 months along with topical Minoxidil, twice daily, for 12 months. Group B (MM): received topical 5% Minoxidil monotherapy, twice daily, for 12 months. PRP was prepared using the double-spin method on a fixed rotor centrifuge. Efficacy was analyzed by standardized global photography, target area trichoscopy and an indigenous Quality-of-Life (QoL) questionnaire. Ninety patients completed the study. The demographic parameters, were comparable in both arms. On global photographic assessment, using the standardized seven-point rating scale, +3 grade improvement was shown by 60% (n – 27/45) in group A versus 20% (n − 9/45) in the monotherapy group. Trichoscopic evaluation of Hair Diameter Diversity (HDD) was done by a four-point scale, with I being "mild" improvement and IV being "marked". Group B showed Grade IV in 42.23% (n − 19/45) vs. 17.78% (n − 8/45) in group A. On subjective questionnaire, the combination group showed statistically higher satisfaction levels (p = 0.039). PRP has a definitive role in stimulating hair growth, and hence, should be offered as a part of the cafeteria approach to all patients with AGA, for improved compliance, and its synergistic action with Minoxidil.

[30]
Profile of patients with alopecia areata in a university hospital

Andressa Sato de Aquino Lopes, Leopoldo Duailibe Nogueira Santos, Rosana Lazzarini (Brazil)

Alopecia areata (AA) is an autoimmune disease causing nonscarring hair loss. Patients with AA are more likely to have other autoimmune diseases. The aim of the study was to describe the epidemiology, clinical aspects and associations in patients with alopecia areata in an Alopecia Clinic. Descriptive and retrospective study of patients with alopecia areata seeing from 2000 to 2017. Statistical analyzes were

carried out using statistical program R version 3.4.2. (R Core Team, 2016). Data was analyzed using the Pearson χ^2 test. A total of 466 cases were identified (58.4% female/41.6% male). Mean age was 33.6 years. 157 women and 84 men presented milder form of disease (< 50% hair loss); 88 women and 79 men presented the extensive form (> 50%). 281 patients (60%) had alopecia in plaques, 102 (21.9%) universal, 16 (3.4%) total. 44 cases (9.4%) had nail changes. 185 (39.7%) had some disease associated. 65 (14%) thyroid disorders, 56 (12%) atopy. 63 patients (13.5%) had at least one family member affected by AA. The analysis showed a statistically significant difference for greater frequency of extensive form among males ($p < 0.05$) and for presence of nail changes ($p = 0.001$). The other parameters didn't show differences. AA is a complex disease affecting the quality of life of patients, having multiple factors involved in its pathogenesis and still poorly understood.

[31]
The JAK/STAT signaling pathway and its role in the hair cycle

Katarzyna Juczyńska, Agnieszka Żebrowska (Poland)

The Janus kinases (JAK) and signal transducers and activators of transcription (STAT) are a group of proteins constituting signaling pathway present in cells. Interaction between particular members of the cascade enables transmitting the signal from extracellular signaling molecules to their target DNA sites, resulting in genes transcription. The STAT family is comprised of seven members (STAT1, STAT2, STAT3, STAT4, STAT5a, STAT5b, STAT6) and there are four tyrosine kinases identified (JAK1, JAK2, JAK3 and TYK2). Stimulation of the JAK/STAT pathway facilitates intercellular communication and plays significant role in various cell processes, such as proliferation, growth, differentiation, migration, apoptosis. Single researches revealed that JAK/STAT signaling is dynamic across the hair cycle, with peaks and declines. There has been emerging evidence indicating that the JAK/STAT signaling plays a significant role in controlling the hair cycle, especially the role of STAT5 as an anagen-inducing factor has been highlighted. However, part of the data collected is contradictory, what underlines complexity of the issue. Better understanding of JAK/STAT involvement in the hair cycle has many implications. It allows to evaluate contribution of irregular functioning of the pathway to pathogenesis of various types of alopecia. Investigating new potential therapies (JAK inhibitors) in treatment of alopecia, especially alopecia areata, is the other benefit.

[32]

The overall trichoscopy and trichogram analysis performed in patients who underwent the innovative pressurized intraperitoneal aerosol chemotherapy (PIPAC) treatment due to peritoneal carcinomatosis – the initial trial

Maciej Nowacki, Katarzyna Nowacka, Maciej Zegarski, Barbara Zegarska, Wojciech Zegarski (Poland)

The term peritoneal carcinomatosis (PC) refers to the metastatic phenomenon of uncontrolled, rapid tumor growth within the peritoneal cavity most often of ovarian, gastro-intestinal alike representative group of other origin including primary types of cancer. Usually PC has a very poor prognosis and it is invariably terminal. Indeed, there is a serious lack of dedicated treatment schemes for patients suffering from advanced-stage PC. Over the past several years, for this group of patients there was no therapeutic option, mainly due to the relatively weak response to intravenous chemotherapy. To the one of the very ambitious clinical solutions targeted onto resolving many of the problems and challenges associated with specialized PC treatment belong in recent years the proposed by scientific team of Prof. Reymond an innovative pressurized intra peritoneal aerosol chemotherapy (PIPAC). The method involves the combination of laparoscopic mini-invasive surgical techniques with a modern way of delivering the drug in the form of appropriately dispersed drops of aerosol under pressure. Despite the very promising effects of this new form of chemotherapeutic drug delivery up to date there are still lack information and none of specific studies focused onto influence of PIPAC onto hair and nails. The aim of this study was to present the initial trial of the overall trichoscopy and trichogram analysis performed in patients who underwent the innovative Pressurized intraperitoneal aerosol chemotherapy (PIPAC) treatment due diagnosed peritoneal carcinomatosis. In this initial study 5 patients were assessed using full specialistic trichoscopy and trichogram analysis. The assessment and analysis has been performed always during 2 days after drug delivery via PIPAC method. The two different protocols based onto cisplatin and doxorubicin alike oxaliplatin has been assessed. The clinical data were always supported by the description of medical records of each patient alike detailed description of each PIPAC intervention. In this initial trial study, we have presented the methodology and first results of the PIPAC chemotherapy implementation onto hairs of different group of patients. The obtained data will help in the future to the proper construction of innovative types of oncological treatment programs for patients suffered from PC.

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[33]

Yellow dots in trichoscopy: relevance, clinical significance and peculiarities

Caren dos Santos Lima, Daniel Fernandes Melo, Luciana Rodino Lemes (Brazil)

Yellow dots (YD) are trichoscopic findings that correspond to dilated follicular infundibulum filled with keratotic material or sebum. They can be found in some scalp diseases featuring distinct characteristics in each of them. In alopecia areata, YD are observed in more than 60% of the patients. They are small, numerous, pinkish-yellow, with a regular distribution along the plaque. YD, in androgenetic alopecia, one of the major trichoscopic diagnostic criteria, are seen in both male and female forms of the disease with a sebaceous component predominance over keratotic elements. They are usually located in the frontal region and have irregular size and distribution. YD in discoid lupus are well delimited and sparse, corresponding to hyperkeratosis and follicular caps observed on histopathological examinations. They are typical of the active phase and are brownish-yellow, with double contour, large dimensions and can present the "red spider in YD" pattern. In dissecting cellulitis, YD present themselves as large structures with a 3D-appearance, resembling soap bubbles, with or without hair shafts. They are usually observed in the active phase of the disease. Thus, YD in trichoscopy has great relevance to diagnostic conclusion, definition of disease activity and determination of prognostic factors. Therefore, it is important to recognize these peculiarities in the context of each dermatosis in order to reach the correct diagnosis and conduct each case appropriately.

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[34]

Therapeutic response to intralesional corticosteroids in the treatment of alopecia areata, a dermoscopic follow up study

Joice Maria Joseph (India)

Alopecia areata is a chronic, autoimmune, inflammatory disease involving hair follicles presenting as non-scarring hair loss. Dermoscopy helps not only in diagnosis and follow up of hair disorders but also identifying activity and severity of alopecia areata.

Dermoscopic examination of 30 patients with alopecia areata was performed using Dermlite Dermoscope DL3 during a time period of 6 months (February 2017−July 2017). Patches of 30 patients were injected with intralesional triamcinolone acetonide at 4 weeks interval and followed up for 24 weeks. Treatment response was evaluated using regrowth scale (RGS). The aim of the study was to evaluate the usefulness of dermoscopy to identify signs of early clinical response of intralesional triamcinolone acetonide. Among the 30 patients enrolled, 24 were males and 6 were females. Mean age was 26.3. 20 patients responded early and achieved RGS of 4 within 12 weeks and 5 patients responded late and achieved RGS of 4 within 24 weeks of initiating therapy. There were 3 patients who did not achieve RGS of 4 at 24 weeks. 2 patients didn't appear for follow up. Dermoscopically, new vellus hairs appeared at 4 weeks. Tapering hair disappeared maximally at 8 weeks. At 12 weeks, complete disappearance was seen in tapering hairs, broken hairs and black dots whereas for yellow dots to disappear completely in all patches it took 20 weeks. Our study has demonstrated the usefulness of dermoscopy to identify signs of early clinical response to intralesional triamcinolone acetonide and markers of disease activity.

[35]

Trichoscopic features of androgenetic alopecia in women with adult acne

Mariusz Sikora, Adriana Rakowska, Małgorzata Olszewska, Lidia Rudnicka (Poland)

Adult acne and female pattern hair loss are one of the most common dermatological diseases that significantly affect quality of life. Similar pathogenic pathways may play an important role in the coexistence of acne and androgenetic alopecia. The aim of the study was to access prevalence of trichoscopic features of androgenetic alopecia in women with adult acne. We performed trichoscopy with Foto-Finder videodermoscope in 63 women (aged 26−44 years old) with diagnosis of adult acne. Patients with hirsutism, polycystic ovary syndrome, menstrual irregularities and hyperandrogenism in laboratory tests were excluded. The most common finding (63%; 40/63) in our patients was increase (more than 10%) of thin hairs (diameter below 0.03 mm) in the frontal area. Increased ratio in percentage of follicular units with 1 hair, comparing frontal area to occiput, was present in 57% (36/63) of participants. 8% (5/63) of cases has increased number of yellow dots in the frontal area. 55% (35/63) of patients with adult acne fulfilled trichoscopic criteria for androgenetic alopecia. Trichoscopy is a useful tool for early detection of androgenetic alopecia in women with adult acne, which allow selecting optimal treatment for both diseases.

[36]

Trichoscopic and histopathological findings in Egyptian patients with alopecia parvimaculata

Marwa Said, Eman Said, Lamia Abdelbary, Marwa Elhady, Mahmoud Saeed Mahmoud (Egypt)

Alopecia parvimiculata is a controversial form of multiple, sudden onset patchy alopecia affecting mainly children. Morphologically, it is difficult to differentiate it from other forms of multiple alopecia. This study illustrates the trichoscopic and pathological findings specific to alopecia parvimiculata. This descriptive analytical study was conducted over 6 months. It includes 30 patients presented by multiple alopecia. Patients with history of trauma, scalp infection, systemic illness affecting hair or those who received topical or systemic treatment in the last month were excluded. Trichoscopic examination using Heine delta 20 and scalp biopsies were obtained for histopathological examination. Trichoscopy of alopecia parvimiculata revealed: black dots (95.6), stumps of hairs (86.4%), exclamation point hairs (83.2%), dystrophic hairs (68.4%), follicles plugged with dark, pigmented debris (67.4%), yellow dots (45.6), tapering hairs (44.3%) and clustered short vellus hairs (shorter than 10 mm) (15.2%) of cases. Histopathologic findings include follicle infundibu-

lar dilatations (88.7%), peribulbar mixed infiltrate (84.4%), telogen follicles (74.2%), vellus hairs (63%), follicular streamers (55%) and telogen germinal units (23.6%). Alopecia parvimiculata clinically simulate other forms of alopecia however there is unique finding appeared on trichoscopy and histopathological examination.

[37]
Trichoscopic features of scalp psoriasis

Joanna Golińska, Marta Sar-Pomian, Lidia Rudnicka (Poland)

Scalp involvement is observed in 47−89% patients with psoriasis vulgaris. In 25% of patients, scalp is a first location of the disease. Our aim was to review literature data regarding trichoscopic features of psoriasis vulgaris. An electronic search of three databases (Scopus, Web of Science and PubMed) was performed using the following search terms: psoriasis AND scalp and (dermoscopy OR videodermoscopy OR dermatoscopy OR videodermatoscopy OR trichoscopy OR "epiluminescence microscopy" OR "superficial microscopy"). A total of 5 articles, including 4 original articles and one case report (a total of 161 patients), were included. Perifollicular scaling was observed in 38.7% (12/31) to 100% (10/10) of patients. Interfollicular scaling was observed in 70% (7/10) of the cases. Perifollicular pigmentation and yellow dots were present in 12.9% (4/31) and 19.4% (6/31) of the cases respectively. Multi-hair follicular units and hidden hairs were present in 58.1% (18/31) and 61.4% (19/31) of patients, respectively. Several vascular patterns were observed. Red dots and globules occurred most commonly and were observed in 42.9% (69/161) of patients, followed by twisted red loops 37.3% (60/161) and glomerular vessels 22.4% (36/161), arborizing red lines 12.4% (20/161), red lines 6.8% (11/161) and signet rings 5.6% (9/161). In conclusion, scaling, both peri- and interfollicular is a common trichoscopic feature of psoriasis. The most common vascular pattern of scalp psoriasis are red dots and globules however several different types of vessels can be observed.

[38]
Circular hairs: nomenclatures and meanings

Daniel Fernandes Melo, Ana Luiza Valle Esteves, Luciana Rodino Lemes, Natália Battisti Serafini (Brazil)

Trichoscopy has become an essential tool for the diagnosis of several diseases that affect not only the scalp but also hair shafts. We identify a set of findings that share a circular form of hair shafts and may represent a trichoscopy pathway for the diagnosis of some clinical conditions. The present study sought to name the many forms of circular hair, highlight some of its peculiarities and identify the disorders of the skin in which they were reported. In the literature, we can find the terms: "circle hair", "rolled hair", "pigtail hair", "hook hair", "coiled hair", and "corkscrew hair" to describe some of the structures viewed by trichoscopy, which, though similar, represent different findings, found many times in distinct diseases. All of these terms refer to a distinct disorder of hair growth, generally related to pathological, inflammatory conditions or trauma, unlike the term "circle hair" that occurs under normal conditions. Circular hairs are one of the important findings that trichoscopy helps reveal in the diagnosis of diseases that affect the hair and scalp. In this sense, though the current literature has not shown any specifc correlation between the morphology of these hairs and the diseases in which they are generally found, knowledge regarding their respective characteristics are necessary to properly employ the trichoscopic nomenclature, the inclusion of differential diagnoses and the appropriate therapeutic medical advice provided to the patient.

[39]
Dermoscopic assessment of focal hairless patches

Ahmed Sadek, Noha Hashem, Dalia Hossam, Radwa Magdy, Mosheera Elbahrawi, Safaa Negm, Nehal Saeid (Egypt)

Focal hairless patch is a common presentation of different scalp disorders either cicatricial such as discoid lupus erythematosus, lichen planopilaris, etc., or non-cicatricial such as alopecia areata, trichotillomania, tinea capitis, etc. Sometimes clinical diagnosis is difficult and further investigations are needed. Dermoscopy is a valuable noninvasive tool that can

provide helpful clues for diagnosis of different scalp diseases. The aim of the study was to assess of the value of dermoscopy in diagnosis of different scalp disorders manifested with focal hairless patch. Dermoscopic examination using Dermlite DL-4 was done for 411 patients presenting with clinically undiagnosed focal hair loss. Patients included in the study appeared to be suffering from different causes of focal hair loss and their final diagnoses were 160 patients suffering from alopecia areata, 15 trichotillomania, 50 tinea capitis, 26 congenital triangular alopecia, 17 tractional alopecia, 5 frictional alopecia, 2 lichen simplex chronicus, 15 discoid lupus erythematosus, 8 folliculitis decalvans, 1 dissecting cellulitis, 14 lichen planopilaris, 86 secondary cicatricial alopecia and 12 nevus sebaceous. Dermoscopy showed characteristic features that could help dermatologists reach the proper diagnosis. Alopecia areata showed 48.75%, 34.37%, 38.12 and 32.5% of cases for black dots, yellow dots, vellus hair and exclamation mark hairs while trichotillomania showed 93.33%, 86.76%, 53.33% and 46.76% of cases for hair cut at different levels, black dots, vellus hair and exclamation mark hair respectively. Dermoscopic findings observed in tinea capitis were comma hairs in 64%, corkscrew hair 50% and zigzag hair 54% of cases. Temporal triangular alopecia showed vellus hairs in 100% of cases and white dots in 38.46% of cases while tractional alopecia showed vellus and miniaturized hair in 64.7%, white dots in 35.29% regrowing pig tail hairs and yellow dots in 23.52% of cases. Dermoscopic examination of discoid lupus erythematosus revealed diffuse white erythematous areas and arborizing vessels in 46.67% and 80% respectively. Patients with lichen planopilaris showed perifollicular scales in 92.86%, peritubular casts in 46.29% white dots and diffuse white erythematous areas in 42.86% and violaceous hue of the scalp in 28.57% of cases. In patients with folliculitis decalvans diffuse white erythematous areas and hair tufts were detected in 100% of cases and follicular pustules in 87.5% of cases. Diffuse white erythematous areas were detected in 98.83% of cases diagnosed with secondary cicatricial alopecia. Nevus sebaceous showed yellow papules in 66.67%, few terminal hairs and yellow structureless areas in 33.33% and reticulate pigment network in 25% of cases. Dermoscopy is a non-invasive markedly useful tool in diagnosis of different scalp disorders.

[40]
Trichoscopy features of eyelashes and eyebrows in frontal fibrosing alopecia

Leopoldo Duailibe Nogueira Santos, Marta Sar-Pomian, Lidia Rudnicka, Andressa Sato de Aquino Lopes, Rosana Lazzarini (Poland, Brazil)

Frontal fibrosing alopecia (FFA) is a primary scarring alopecia with a distinctive progressive frontal temporal hairline recession. Eyebrow loss is present in up to 80% of the patients. Eyelash loss is observed in 14% of patients and is regarded as an independent factor of severe FFA. The aim of the study was to evaluate trichoscopic features of eyelash and eyebrow involvement in FFA. A total of 22 patients with FFA were included in the study. The diagnosis was based on clinical assessment and histopathology of scalp lesions. Videodermoscopy (FotoFinder®; 20× and 70×) was used to evaluate eyelash and eyebrow involvement in 21 and 22 patients, respectively. The most common eyebrow features on trichoscopy were: decreased eyebrow density (100%), miniaturized hairs (95.5%), regrowing hairs (95.5%), dystrophic hairs (68.2%), pink areas with white lines (59.1%), perifollicular scale (40.9%) and black dots (31.8%). The most common eyelash features on trichoscopy were: regrowing hairs (95.2%), pink areas with white lines (90.5%), miniaturized hairs (81%), dystrophic hairs (62%), perifollicular scale (62%), decreased hair density (62%), blank areas (47.6%), black dots (33.3%) and hair casts (28.6%). Trichoscopy increases diagnostic accuracy of eyelash and eyebrow loss in patients with frontal fibrosing alopecia.

[41]
Dermoscopic study of tinea capitis

Joice Maria Joseph (India)

Tinea capitis is a dermatophytic infection of the scalp that occurs mainly in children. Trichoscopy is a rapid and noninvasive tool to detect more details of patchy hair loss.

Trichoscopic examination of 42 patients with tinea capitis was performed using Dermlite DL3 dermoscope during a time period of 6 months (Feb 2016–July 2016). Direct microscopy, wood's lamp examination and fungal culture was performed to all patients. The aim of the study was to describe der-

moscopic patterns in the trichoscopic examination in patients with tinea capitis. Among the 42 patients enrolled, 30 patients were males and 12 patients were female. Mean age of the patients was 8.2. Greyish patch type was the most common type observed. 85% cases were KOH positive. On dermoscopy, comma hairs (73.8%) was the most common finding observed followed by broken hairs (59.5%), question mark hairs (38%), black dots (38%) and corkscrew hairs (16.67%). Scales, peripilar casts and yellowish crusts were also observed. Our study confirms that dermoscopy is a useful diagnostic and confirmatory method for non-inflammatory type of tinea capitis. The association of clinical and dermoscopic findings in tinea capitis may help with differential diagnosis of etiological agent.

[42]
Trichotillomania: three patients treated with N-acetylcysteine

Hugo Martinez (Mexico)

Trichotillomania was described in 1889 by Hallopeau. It is considered a psychiatric disease, characterized by a persistent hair pulling developing alopecia in different areas. We present 3 patients, females with the diagnosis of trichotillomania. The first case is a 10-year-old patient. She has a skin disease localized in her head, affecting scalp, predominantly in parietal and occipital areas. The main characteristics are: irregular and diffuse areas, terminal hair cut in different levels. The evolution was 6 months of progressive alopecia, she did not have any other symptoms. Her mother said that her daughter was a victim of bullying at school. She was classified with obesity. Second case, is a patient of 30 years. She had a skin disease localized to the head, affecting scalp in bilateral and symmetrical form in temporal areas. We observed decreased volume and density of terminal hair, adopting a square figure, and irregular borders were observed. Evolution was about 1 year. She referred pain in affected areas. Disease started after she broke with her sentimental couple. Third case report is a patient of 15 years. Lesions were localized in her scalp, frontal and parietal areas, characterized by mistreated hair with decreased volume and density and hematic scabs. The affected area showed irregular limits and terminal hairs were cut in different levels. The disease started 7 months prior to medical consultation. In the three cases we observed a depressive situation, however, none of them were evaluated by a psychiatricians. It is important to comment the three patients had received treatment as alopecia areata without positive results. Trichoscopy: we observed terminal hairs cut in different levels, black dots and some damaged follicles with pulling hair appearance (brush sign) were found. It did not exist yellow dots and follicular atrophy. Treatment: We started only with N-acetylcysteine 1, 200 mg daily divided in 2 different doses for 6 weeks. After this period of time, dose decreased to 600 mg daily for the following 6 weeks. In the three cases there was a satisfactory evolution. Observing a size reduction of affected areas and growing in hair density. With the first case report, we observed reduction of affected areas since the first month of treatment. She also received attention by a neurologist. With the second patient we observed improvement until the second month of treatment, however, practically in the third month, disease was resolved in 90%. She referred pain decrease. With the third case we observed more hair density in frontal area since the first month of treatment, but she suspended medication and only the shampoo was applied. The trichotillomania is classified in the impulse control disorders. It is frequently present in childhood and adolescents, predominating in females. We must differentiate it from alopecia areata, but sometimes it is difficult. Trichoscopy is a fundamental item to realize a better diagnosis. The goal of the treatment is to control anxiety. N-acetylcysteine helps in these cases, because the action mechanism gives advantage for the patient, recognizing important adaptative situations and developing an adequate motor behavior. It permits the patient to be conscious of their actions against their own health and as consequence they stop doing it. Recommended dose goes from 600 to 1200 mg/day. There are some reports using 2400 mg/day. It is recommended to make reducing doses and authors suggest periods of 3 to 6 months, depending of clinical response.

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[43]
The role of trichoscopy in the assessment of a patient with erythroderma. A case series

Martyna Sławińska, Michał Sobjanek, Roman J. Nowicki, Małgorzata Sokołowska-Wojdyło (Poland)

The diagnosis of a patient with erythroderma may be difficult and sometimes pose a challenge for both dermatologist and pathologist. The role of dermoscopy in this area seems to be poorly investigated. There are only few studies, with limited number of patients, describing dermoscopic features in erythroderma of various origin. To the best of our knowledge none of the previous studies included trichoscopic examination. We present a clinical, dermoscopic and trichoscopic findings in series of patients with erythroderma consulted and treated in Department of Dermatology, Venerology and Allergology Medical University of Gdansk, Poland. Based on the case series of patients with erythroderma of various etiology we discuss the role of trichoscopic evaluation in this group of patients. We also present the common features and differences between dermoscopic/trichoscopic features in the studied group.

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[44]
Alopecia areata coexisting with discoid lupus

Asmahane Souissi, Azima Ben Tanfous, Imed Ben Ghorbel, Mourad Mokni (Tunisia)

Dermoscopy is an interesting tool to distinguish various disorders which may coexist with discoid lupus erythematosus (DLE) of the scalp. A 47-year-old woman had been followed with the diagnosis of DLE of the scalp for fifteen years. She was referred to our department for evaluation of recent alopecia for one month. Physical examination revealed multiple scarring alopecic plaques on the parietal and occipital regions of the scalp. Patches of non-scarring alopecia were not found, though trichoscopy revealed Pohl-Pinkus constrictions between the scarring alopecic patches. Besides, careful examination of the eyebrows noticed rarefaction of hair. The patient confirmed that she had indeed noticed a concomitant eyebrow hair loss. Dermoscopy of the eyebrows showed blacks dots. The patient was diagnosed with alopecia areata (AA) and was treated with topical steroids. She achieved regrowing white hairs of the eyebrows after 3 months. The association of AA and lupus erythematosus (LE) has been reported anecdotally. LE and AA could have a common immune background. The originality of our observation comes from the difficulty in clinical diagnosis of the AA. Thus, here the dermoscopy helped to make the diagnosis. To our knowledge, there are no other reported cases documenting the association between diffuse AA and DLE.

[45]
Association of frontal fibrosis alopecia and alopecia areata in a female patient

Asmahane Souissi, Mehdi Karray, Fatma Jendoubi, Imed Ben Ghorbel, Mourad Mokni (Tunisia)

Frontal fibrosis alopecia (FFA) is a predominantly postmenopausal, rare primary cicatricial alopecia. To our knowledge, its association with alopecia areata (AA) has never been described. We report a 53-year-old female menopausal caucasian patient presented with right occipital bald patch and progressive hair loss in the frontotemproal region for one year. Her past medical history included hypothyroidism treated with levothyroxine and heart valve replacement under therapy with warfarin and propranolol. Clinical examination showed a band-like recession of the frontotemporal hairline with uniformly pale skin and loss of follicular orifices where the recession had occurred. A partial eyebrow loss was also noted. A patch of nonscarring alopecia was also present in the right parieto-occipital region of the scalp. Dermoscopic examination was performed in both frontal and occipital region of the scalp. Over the hairline, we observed a loss of follicular orifices, a perifollicular hyperkeratosis, a feeble perifollicular erythema and a lonely hair. In the occipital bald patch, dermoscopy showed yellow and black dots and vellus hair. A scalp punch biopsy from the frontal hairline was performed. Histological examination showed a prominent lymphocytic infiltrate in a lichenoid pattern. Collectively, these findings suggest an association of FFA and parieto-occipital patchy AA. The exact pathogenesis of FFA and AA remains unknown. FFA has been postulated to mirror the autoimmune process underlying AA. Our case may be considered as an argument in favor of a possible parallels between these two conditions.

[46]
Omalizumab-induced alopecia

Karolina Kozera, Adriana Rakowska, Joanna Czuwara, Joanna Hermanowicz-Salamon, Lidia Rudnicka (Poland)

Omalizumab is an anti-IgE monoclonal antibody indicated as an additional therapy in patients with severe allergic asthma and chronic urticaria. One of adverse side effects of omalizumab treatment is hair loss. The dermatological diagnostic process (including trichoscopy and trichogram) in those patients has not been described yet. We present a case of 42-years-old female patient with diffuse hair loss that appeared 4 months after beginning of omalizumab therapy for severe asthma. A complete diagnosis of the scalp was performed to exclude other causes of hair loss. Biochemistry tests and indirect immunofluorescence were carried out. Trichoscopy and trichogram were performed. In addition, biopsy of the scalp was taken for direct immunofluorescence and histopathological examination. There were no changes in the skin, mucous membranes and nails. Except for low iron and ferritin and elevated IgE concentration laboratory tests were normal. Indirect immunofluorescence test was negative. In trichoscopy and trichogram we excluded telogen effluvium. The main finding in the biopsy of the frontal part of the scalp was dystrophy of the hair shafts indicating

trichomalacia. This is the first case of a patient with hair loss during treatment with omalizumab that had been analyzed using trichoscopy, trichogram and histopathology. Considering the results and the clinical presentation, it can be hypothesized that omalizumab causes trichomalacia. However, this requires extending the tests to a larger group of patients.

[47]
Trichoscopic assessment of frontal fibrosing alopecia treatment effects

Piotr Szlązak, Tomasz Iwanowski, Gustaw Roter (Poland)

Frontal fibrosing alopecia is one of the most prevalent types of scarring alopecia. Majority of the proposed treatment modalities do not come from the medical guidelines but from personal observations and case reports of individual physicians or institutions. There are also no explicit criteria for assessing a disease-free state or whether the progression of the disease is slowing. We will present cases where patients have not experienced progression of their condition, despite persistently high index of disease activity. Additionally, we will explore side effects of local corticosteroid treatment or intralesional steroid application and the impact these have on the difficulty of treatment assessment. We will also include our observations regarding the regression of perifollicular characteristics observed in trichoscopy before the treatment, including perifollicular hyperkeratosis.

Histopathological examination remains a golden standard in the assessment of treatment progression. At the same time a skillful trichoscopic examination can be an indispensable tool to answer the following questions: Is the therapy applied effective? Does it require to be continued? Is it possible to conclude the treatment? How to monitor FFA patients in the stage if remission?

[48]
Tinea capitis mimicking female pattern hair loss

Jill Chitalia, Madhulika Mhatre, Rachita Dhurat (India)

Tinea capitis is a superficial fungal infection of the scalp. It usually presents as single or multiple patches of hair loss with scaling (grey patch) or broken hair (black dot) or multiples pustules and boggy swelling (kerion). The most common trichoscopic features described are — black dots and broken hair whereas specific features are comma hair, corkscrew hair, zig-zag hair and morse-code like hair. On the other hand, female pattern hair loss is clinically diagnosed by presence of mid-partition widening of scalp along with hair shaft diameter variation of more than 20% in frontal area on trichoscopy. A 20-year-old female came with chief complaint of diffuse hair fall since 6months. She had no h/o menstrual irregularities/ thyroid/any recent illness or drugs. She had no family h/o of patterned hair loss. On examination, mid partition widening, and scaling was seen. Hair pull test was positive. To our surprise, trichoscopy revealed multiple broken hair, comma hair, corkscrew hair and scaling. Hair diameter diversity was less than 10%. Hence a provisional diagnosis of tinea capitis was kept, and biopsy was done. Histopathological examination revealed multiple spores within the hair shaft, which was confirmed by Periodic acid–Schiff (PAS) staining. Patient was treated with Tab. Griseofulvin 250 mg twice a day. After 1month, no comma or corkscrew hair was seen on trichoscopy and hair pull test was negative. Tinea capitis presenting as female pattern hair loss has not been reported yet to the best of our knowledge. Also, it is rarely seen in adults after puberty. Trichoscopy led to suspicion and diagnosis of Tinea capitis in our case. Hence, I would recommend trichoscopy as a sensitive tool for quick diagnosis and monitoring treatment response in tinea capitis.

[49]
Cluster of star appearance. A new trichoscopy marker for diagnosis of atrichia congenita with papular lesions.

Radha Mundhra, Rachita Dhurat, Sanober Daruwalla (India)

Atrichia congenita with papular lesions (APL) represents a complex and heterogenous group of genodermatoses with unclear etiopathogenesis. It is characterized by hair loss soon after birth and is associated with development of keratin filled cysts over the body. Ahmed *et al.* was the first who referred to this condition as congenital atrichia. Homozygous mutations in the hairless gene (HR) have been implicated. We herein report a child with congenital atrichia with papular lesion, which is very

rarely reported in the literature and its characteristic dermoscopic findings. A 5-year-old female child was brought to the outpatient department for decreased hair growth over the scalp, eyebrows, and eyelashes since birth with no significant family history. On clinical examination, 10–15 sparse discrete, lusterless hairs with rough texture were present over scalp. She also had complete absence of hair over eyebrows, eyelashes since birth. On closer cutaneous examination tiny monomorphic keratinous papules were seen over the scalp. Dermoscopy of the scalp revealed cluster of white dots distributed across the entire scalp. On trichoscopy, we noted a characterized pattern of cluster of white dots on the scalp, which has been described as a "cluster of stars" appearance. On the basis of dermoscopy and clinical findings congenital atrichia with papular lesion was diagnosed. This case highlights the trichoscopy findings that appears to be a characteristic finding for the disease. Thus, we present this case as it is rare and giving a characteristic clinical and new trichoscopy finding in the era. Dermoscopy forms a noninvasive diagnostic tool and it may obviated the need of scalp biopsy especially in pediatric age group.

[50]
Severe scalp involvement in a patient with pemphigus vulgaris and prostate cancer

Aleksandra Wielgoś, Marta Sar-Pomian, Joanna Golińska, Anna Skrok, Lidia Rudnicka, Małgorzata Olszewska (Poland)

Scalp involvement is observed in up to 60% of patients with pemphigus vulgaris. Recent data show that it may be a marker of the severe course of pemphigus. We report a case of a patient with pemphigus vulgaris and prostate cancer with extensive and treatment-resistant scalp lesions. A 73-year-old patient with a 14-year history of prostate cancer and pemphigus vulgaris presented with a relapse of diffuse crusted erosions, lasting for about 4 months. During the course of the disease, persistent scalp lesions were observed, not responding to the initial treatment with prednisone (80 mg/day). Immunosuppressive adjuvant treatment was not administered due to oncological contraindications. On admission, the severity of scalp lesions, expressed as Pemphigus Disease Area Index activity was evaluated as 10 (scalp surface area 40%), while skin and mucous lesions as 28 and 7, respectively. Trichoscopy of crusted erosions revealed yellow hemorrhagic crusts, extravasations, whitish cotton wool-like areas and polymorphic vessels. Histopathology of scalp lesions revealed the presence of suprabasal acantholysis and acantholysis of the terminal hair follicle extending down the entire length of the outer root sheath. Indirect immunofluorescence showed the presence of pemphigus autoantibodies at the titer of 320 and 80 on monkey and guinea pig esophagus, respectively. Pemphigus lesions on the scalp tend to be resistant to treatment and may persist as the isolated location of pemphigus lesions. Therefore, if not contraindicated, patients with scalp involvement require more intensive immunosuppressive treatment.

[51]
Shock loss following follicular unit extraction – trichoscopic simulator of alopecia areata

Amit Kerure (India)

Post hair transplant either in follicular unit extraction or follicular unit transplantation donor shock loss has been reported in literature. Poor vascular supply is considered the reason behind shock loss. Extensive extraction in follicular unit extraction, tight wound closure in follicular unit transplantation, excessive use of adrenaline in tumescent anesthesia can be the causes of vascular jeopardization. Usually it heals in few weeks but can cause anxiety to the patient as well as the surgeon. The trichoscopic findings of shock loss literally mimics alopecia areata which includes black dots, tapering hair, cadaverized hair, empty hair follicles, exclamation mark hair as well as caudabilty sign and dystrophic hair.

We have a series of 5 cases of post-transplant (follicular unit extraction) shock loss at donor area. In all cases alopecia patches appeared within a week of hair transplant. Trichoscopic findings of alopecia patches in all cases were similar to alopecia areata. The biopsy report revealed that there is no sign of alopecia areata in any of the case. Histopathology showed dilated capillaries around hair follicles suggesting compensatory blood supply and mucin deposition around arrector muscles suggesting degenerative changes due to poor vascular supply. So, the diagnosis of shock loss was considered. All patients were reassured and treated with topical minoxidil application. The lesions in all patients started improving after 4–6 weeks of starting the treatment. Complete hair growth was seen at the end of 3 months.

Clinician should be aware of trichoscopic findings of shock loss apart from alopecia areata. A recent history of hair transplant and biopsy can confirm the diagnosis

[52]
Eyelash trichoscopy as a useful tool in diagnosis of Demodex blepharitis

Zofia Mazurek-Durlak, Anna Wojas-Pelc (Poland)

Blepharitis and eyelid eczema are common and frustrating problems. Demodex blepharitis is one of many causes of chronic eyelid lesions that seems to be underdiagnosed. We present 4 patients (3 females, 1 male) suffering from chronic eyelid lesions connected with stinging and pruritus. The patients unsuccessfully tried different topical treatments (i.e. steroids, calcineurin inhibitors). Dermoscopy of the eyelids showed eyelid dandruff and structures protruding from the eyelid margins suggestive of Demodex mites. The eyelash samples were examined by light microscope confirming the presence of Demodex mites and their larves. After topical treatment with metronidazole and tea tree oil the clinical improvement was observed. Trichoscopic features of Demodex mites improved as well. Demodex infestation should be considered as possible etiology of blepharitis. Eyelid trichoscopy is useful diagnostic tool in diagnosis of demodex blepharitis.

[53]
White nodules on the hair – a case series of extensive white piedra

Radha Mundhra, Rachita Dhurat, Jill Chitalia (India)

White Piedra is an unusual asymptomatic superficial fungal infection of the hair, characterized by the presence of numerous, discrete, soft, asymptomatic nodules loosely attached to the infected hair shafts. White Piedra less commonly affects the scalp hair and is more common on other hairy sites of the body. It is caused by a yeast-like fungus, Trichosporon beigelii. T. beigelii having six different human pathogenic species has been studied. Successful treatment of White Piedra has been achieved with clipping of affected hair or tonsuring and use of topical antifungal agents.

A 19-year-old female presented with asymptomatic whitish nodules in the scalp hair in the past 1 month. Clinical examination revealed multiple whitish to cream-colored, nodules of size 1−1.5 mm present over the shaft of almost all the scalp hairs. Another 28-year-old female came for evaluation of palpable nodules along the scalp hairs with fragility for 2 months examination in both the cases revealed normal-looking scalp hair without evidence of sparseness. However, individual hair showed well-palpable whitish nodules distributed at irregular intervals and not easily movable along the hair shaft. Hair pull test result was negative. Wood's lamp examination of the affected hairs and hairs from other body parts did not show any fluorescence. On trichoscopy, the nodules were completely encircling the hair shaft and not moving along the hair shaft. Scalp skin and other hairy areas were normal. (KOH 10%) wet mount of the affected hairs showed septate hyaline hyphae arranged perpendicular to the hair shaft. Arthrospores and blastospores were seen. Culture could not isolate the species. We reached final diagnosis of white piedra. Cases were treated with topical ketoconazole shampoo for two weeks, with no improvement, requiring addition of oral itraconazole 100 mg once daily with a decrease in the palpability of nodules (concretions) and fragility of scalp hairs. After one month, there was complete resolution of nodules and there was no need for clipping of hair. White piedra affects pubic hair, axillary hair, moustaches, beard and eyebrows; whereas black piedra affects scalp hair. Clinically, the differential diagnosis of white piedra with pediculosis, trichobacteriosis, black piedra and even with morphological changes in the hair shaft — trichorrhexis nodosa and trichoptilosis — can be difficult, with frequent treatment attempts before a visit to the dermatologist. Therapeutic measures involving cutting the hair and application of antifungal shampoos with zinc pyrithione 2%, ketoconazole 2% or ciclopirox olamine 1% are widely considered effective. Oral itraconazole should be considered as an effective treatment modality.

[54]

A case of discoid lupus erythematosus on the scalp

Andrei Doroshkevich, Tatiana Silyuk (Russia)

Discoid lupus erythematosus (DLE) when localized on the scalp is often regarded as the cause of primary lymphocytic scarring alopecia. However, some authors indicate that DLE does not lead to classical irreversible alopecia since the hair follicles are not the primary target of inflammation and the process is not folliculocentric. In practice this means that proper diagnosis and timely treatment can achieve significant restoration of hair growth. We present a patient, female, 30 years old, who was wrongly diagnosed three times (alopecia areata, tinea capitis twice) before she was carefully examined using a trichoscope. We achieved hair regrowth by 80% of the focus area during the course of therapy. Also, we highlight the features of trichoscopic diagnosis and treatment.

[55]

A rare case of scalp seborrheic dermatitis manifesting as patchy alopecia

Magdalena Wawrzynkiewicz, Maciej Pastuszczak, Grzegorz Dyduch, Anna Wojas-Pelc (Poland)

Seborrheic dermatitis, the disease associated with the presence of itchy scales and inflammation, when located on the scalp, can in some cases cause a temporary hair loss. Diffuse hair loss is the most common manifestation of alopecia affecting patients with seborrheic dermatitis. However, until now there were only several cases describing patchy hair loss as a result of inflammatory condition in the course of seborrheic dermatitis. We present a case of a 23-years-old woman who was referred to our Department with a patchy hair loss. Clinical examination revealed several inflamed bold patches on her scalp. In trichoscopy diffuse and perifollicular yellowish scaling, follicular pustules, red dots, and scattered brown pigmentation were found. Routine fungal culture tests were negative. However, when special medium was used, a significant growth of Malassezia furfur was observed. The results of histopathological examination showed psoriasiform hyperplasia of the epidermis, mild spongiosis, some exocytosis of neutrophils, edema of papillary dermis and mild superficial perivascular infiltrate of lymphocytes and neutrophils. Treatment with systemic antifungal drugs and topical glucocorticosteroids with salicylic acid was initiated. We observed reduction of inflammation and complete hair regrowth after 12 weeks. Hair loss can lead to serious psychological problems. Therefore, the most important thing seems to be finding the reason of alopecia. Only then, the proper treatment and the hair regrowth is possible. As we show, seborrheic dermatitis should be taken into consideration as a cause of patchy alopecia.

[56]

Intralesional triamcinolone in combination with topical clobetasol in therapy of scalp lipedema

Patrycja Gajda, Adriana Rakowska, Olga Warszawik-Hendzel, Joanna Czuwara, Mariusz Sikora, Lidia Rudnicka (Poland)

Scalp lipedema is a poorly known and rarely reported entity. Clinically, it presents with a thick boggy scalp resulting from subcutaneous tissue hyperplasia. There is no standard treatment for this condition.

A 68-year-old woman with hypertension and diabetes mellitus type 2, presented an increased thickness of the scalp with concomitant persistent burning sensation and pain. This condition had started three years ago. Physical exam showed a soft, boggy thickening of the parietal and occipital scalp. Trichoscopy showed no hair abnormalities. On ultrasound, the parietal an occipital scalp measured 10 mm. Histopathological examination revealed a thickened edematous subcutis without any inflammatory infiltrate, as well as normal epidermis and unaffected dermis. Triamcinolone injections of 10 mg/ml every 4–6 weeks and topical clobetasol propionate once daily were used in the treatment for one year, without any side effects. A significant reduction of subcutaneous tissue in the occipital and parietal region and relief of pain and burning sensation were achieved.

The combination of intralesional triamcinolone injections with topical clobetasol cream/ointment may be an effective and safe treatment in scalp lipedema.

[57]

Therapy-resistant folliculitis decalvans successfully treated with adalimumab

Mariusz Sikora, Adriana Rakowska, Małgorzata Olszewska, Lidia Rudnicka (Poland)

Folliculitis decalvans is a neutrophilic cicatricial alopecia that classically presents as an expanding patch of alopecia with follicular pustules, crusts, and tufted hairs. The lack of treatment protocols and insufficient efficacy of existing methods make treatment of the disease a real challenge. We report a case report of 43-year-old man who had progressive folliculitis decalvans for 5 years. He was treated with oral antibiotics (rifampicin and clindamycin, cotrimoxazole), retinoids (isotretinoin and acitretin), methotrexate and triamcinolone. Despite these therapies, the disease remained active, with a significant impact on quality of life. We initiated treatment with tumor necrosis factor α-blocker adalimumab, 40 mg subcutaneously every two weeks. After 12 weeks, marked reduction of clinical and trichoscopic features of inflammation was observed. In addition, the therapy contributed to a significant improvement in the patient's quality of life (assessed by using DLQI

and Scalpdex scales). Treatment was well-tolerated, without serious adverse effects. Patients with FD can benefit from therapy with TNF-α blocking substances. These agents could thus broaden the narrow range of available therapies for this highly chronic disease.

[58]
Lichen planus involving mucous membranes, nails and hair in a patient with autoimmune hepatitis and thyroiditis

Magdalena Żychowska, Joanna Maj (Poland)

Lichen planus (LP) is an inflammatory disease that can affect skin, nails, hair and mucous membrane. The role of autoimmunity in the development of LP remains controversial. Several studies point at the possible association with autoimmune thyroiditis, systemic lupus erythematosus, alopecia areata or Sjogren syndrome. A 75-year-old woman presented for evaluation of whitish plaques and erosions on oral and genital mucous membranes, which had started seven years ago and had been repeatedly treated with oral and topical antifungals, with no effect. In addition, the patient complained of progressive alopecia for several years and atrophy of the toenails. She had been diagnosed with autoimmune hepatitis and autoimmune thyroiditis twenty years ago and she had been treated with systemic corticosteroids for many years. On admission she was on the maintenance dose of prednisone of 10 mg/day. Physical examination revealed extensive white streaks and erosions on the oral and genital mucous membranes, longitudinal ridging of the nails with partial atrophy of the toenails and irregular patches of cicatricial alopecia on the scalp with perifollicular papules. The histological and immunopathological examinations were consistent with the diagnosis of LP. The dose of prednisone was increased to 40 mg per day. Significant improvement was observed after two months of therapy. The involvement of mucous membranes and appendages in the presented patient coexisting with autoimmune hepatitis and thyroiditis highlights the need for researching the role of autoimmunity in the pathogenesis of LP.

[59]
Hairy earlobes. In search for pathogenic factors

Paulina Chmielińska, Marta Sar-Pomian, Adriana Rakowska, Małgorzata Olszewska, Lidia Rudnicka (Poland)

Acquired excessive hair growth located on the earlobes is a rare disorder. Isolated hairy pinnae were reported in human deficiency virus infection and hypogonadism. Acquired hypertrichosis may be related to neoplastic and metabolic diseases. It may be also induced by the treatment with cyclosporine and corticosteroids. We present a patient, in whom excessive hair growth on the earlobes developed during the treatment of pyoderma gangrenosum with prednisone and cyclosporine. A 59-year-old man with a 2-year history of pyoderma gangrenosum presented with an excessive hair growth bilaterally on the earlobes lasting for one month. The patient was treated with prednisone (40 mg/d) in combination with oral cyclosporine (300 mg/d) for 8 months. On the examination, the terminal hair growth was present on the helix, antihelix, concha, tragus, antitragus and lobule. Laboratory tests revealed leukocytosis (13.35 G/l) with neutrophilia (11.93 G/l). Human immunodeficiency virus test was negative. The tumor markers CEA, AFP, CA19-9 were within normal limits. Abdominal sonography revealed liver steatosis. The patient did not consent to endoscopy of gastrointestinal tract. The concentration of coproporphyrin in daily urine collection was elevated and equaled 270 μg; while uro-, hepato-, hepta-, hexa-, pentaporphyrins, delta-aminolevulinic acid and porphobilinogen were within normal limits. In patients with localized hypertrichosis on the earlobes the analysis of drug intake history as well as a diagnostic approach towards gastrointestinal cancer, porphyria cutanea tarda and human immunodeficiency virus infection are required.

[60]
Wooly hair nevus

Daniel Melo, Karen Cunha, Karina Fernandes, Thiago Vargas (Brazil)

Woolly hair nevus is a benign and uncommon condition. It affects both sexes equally, and usually develop in the first years of life. The term woolly refers to an abnormal change in the hair structure, that

becomes coiled and, in some cases, slightly hypopigmented. Hutchinson *et al* classified woolly hair in 3 variants. The generalized form is further subdivided in: hereditary form and the familial form. The localized form is also known as woolly hair nevus. Post divided woolly hair in 3 types (1 – no association with scalp disorders or loss of body hair; 2 – associated with linear verrucous epidermal nevus; 3 – acquired). Woolly hair nevus is a non-hereditary form of woolly hair that in 50% of cases is associated with verrucous epidermal nevus. Persistent pupillary membrane and diastema were also reported. Woolly hair nevus syndrome is characterized by hair abnormality, verrucous epidermal nevus and other extracutaneous changes.

Nine-year-old male child, sought medical care with the complaint of curled and light hair, restricted to the right parietal and occipital regions since he was 2 years old. He had diastema and linear verrucous epidermal nevus on the posterior cervical region.

In the reported case, the patient had woolly hair associated with linear verrucous epidermal nevus and with the work-up, any systemic abnormality was ruled out. In cases like the one described, it is important to remember wooly hair and its variants.

[61]
Dermatophytosis of the eyelashes caused by Microsporum canis

Asmahane Souissi, Fatma Jendoubi, Nourchène Toukabri, Yousra Jmour, Mourad Mokni (Tunisia)

Although considered a common dermatosis, dermatophytosis has rarely been reported to involve the eyelashes. We herein report a case of a 4-year-old girl who presented with tinea ciliaris caused by Microsporum canis. A 4-year-old girl presented to dermatology clinic with a two-week history of crusted plaque on her right upper eyelid margin. She has no past medical history. On physical examination, the patient presented a hyperkeratotic plaque trapping eyelashes and causing a partial alopecia. A mild edema of the upper eyelid margin was noted with no erythema nor scales. The patient had no evidence of other tinea infection on examination. Clinical specimens were collected for direct examination and culture. Direct microscopic examination of pulled eyelashes revealed ecto-endothrix invasion of the eyelashes. Macroscopic characteristics of culture strain as well as microscopic observation were consistent with Microsporum canis. Therefore, diagnosis of tinea ciliaris was made and the patient was treated with oral griseofulvin 20 mg/kg/day for 6 weeks. Our case describes an unusual location of fungal infection. Reports from literature of dermatophytosis affecting periorbital area are extremely scarce. Physicians are often unaware of dermatophytes capacity for affecting the eyelashes. Thus, periocular tinea should be considered as a differential diagnosis for periocular inflammation in order to properly treat the patient.

[62]
Rare in hair: a gamut of interesting cases

Nitya Malladi, Rachita Dhurat, Jill Chitalia, Smita Ghate, Ameet Dandale, Tejas Vishwanath, Deepti Shukla (India)

In the interesting world of trichology, we come across a few cases which baffle us and open our minds to a whole new possibility. We have put together a cases series of such interesting cases which help us broaden our horizons. Case 1. 15-year-old female presented with a single swelling over scalp in the last 5 years. It was a well-defined skin colored to bluish white swelling of size 0.5 cm × 0.5 cm. Clinical differentials were pilomatricoma, hidrocystoma and sebaceous cyst. The histopathology revealed a nodule in deep dermis consisting of monomorphic cells with central dark staining nuclei with multiple blood vessels. This clinched the unique diagnosis of Glomus tumor on a rare site-scalp. Case 2. 28-year-old female presented with asymptomatic raised lesions over the chest, abdomen in the past 6 months. Multiple, discrete, smooth, dome shaped flesh colored papules 1–5 mm in size were present. Differential diagnosis was steatocystoma multiplex, trichilemmal cysts or eruptive syringomas. The biopsy demonstrated a mid-dermal cyst lined by squamous epithelium with cross sections of vellus hair and laminated keratinous material. This was suggestive of eruptive vellus hair cysts. Case 3 and case 4. These 2 cases presented to us separately with complains of sparseness of hair on scalp with no scarring, spiny papules with photophobia. Systemic evaluation revealed borderline intelligence and growth retardation with squamous blepharitis in the second case. The biopsy showed pilosebaceous hypoplasia. The diagnosis of a rare syndrome — ichthyosis follicularis alopecia photophobia (IFAP) syndrome was made for these cases. Intriguing cases like these help us to think beyond the usual and histopathology aids the diagnosis of such cases.

ABSTRACTS

POSTERS AND OTHER PRESENTATIONS

[63]
Trichoscopy in hair breakage

Wafaa Ramadan (Egypt)

Hair breakage is an important cause of hair loss in women. Breaking off along the hair shaft could be due to improper hair care practices or hair cosmetics, trichotillomania, and tinea capitis. In some instances, it could be due to trichorrhexis nodosa or piedra. Examples of all these disorders will be discussed. The importance of trichoscopy in their diagnosis and follow up of the prognosis will be illustrated.

[64]
Primary cutaneous melanoma of the scalp. Clinical diagnosis and dermoscopy

Olga Warszawik-Hendzel, Małgorzata Maj, Agnieszka Gradzińska, Małgorzata Olszewska, Piotr Rutkowski, Lidia Rudnicka (Poland)

Nearly 20% of melanomas occur on the head and neck area but only 2–5% arise on the scalp. Scalp melanomas are more often found in males and are associated with increased Breslow thickness and are more frequently ulcerated compared to all other anatomic sites. Moreover, patients with primary scalps melanomas have pore outcomes and are particularly high risk of brain metastasis than patients with melanomas on other head and neck sites. The reason for this difference and whether it is applicable to all locations within the head and neck remains unclear.

We present a 33-years old woman with primary melanoma located on the scalp who developed brain metastasis. Clinically, an atypical nevus of 5 cm in diameter with irregular borders, nodules and variable colors was located in the right temple area. Dermoscopy images revealed the presence of multiple brown and black dots, blue-white veil, pseudopods, scar-like depigmentation, irregular linear vessels, hairpin and dotted vessels. Histopathology examination confirm melanoma pT3a, Breslow 2.3 mm and BRAF V600 mutation. Due to epileptic seizure, magnetic resonance of the head was performed confirming metastatic disease.

Although cutaneous head and neck melanoma is a rare condition, it is a challenging disease owing to its aggressive nature and often times advanced stage at presentation. It is mandatory that dermatologists perform scalp inspection during routine dermoscopy examination.

[65]
Trichoscopy findings in different clinical stages of dissecting cellulitis of the scalp

Daniel Fernandes Melo, Luciana Rodino Lemes, Violeta Duarte Tortelly, Bruna Duque Estrada, Rodrigo Pirmez (Brazil)

Dissecting cellulitis (DC) is a rare, progressive and relapsing inflammatory disease, with predominance of histopathological neutrophilic infiltrate. Clinical findings vary with extent and severity of the disease. It is more frequent in young African descendent men in the vertex and occipital area with papules and pustules that can develop into nodules or interconnecting abscesses and even cicatricial alopecia. We describe and propose three evolutive trichoscopy stages of DC, that represent the three different clinical stages of the disease. In the early stages, the trichoscopy picture shares similarities with alopecia areata, where it is possible to see the presence of black and yellow dots. In the abscedans stage, "3D" yellow dots imposed or not over dystrophic hairs and yellow structureless areas are present, both known as the most characteristic trichoscopy findings of DC. With the progression of the disease to the fibrotic stage, it is possible to find trichoscopy features that are similar to the end phase of others scarring alopecias, like white areas lacking follicular openings. Therefore, differentiation of these three trichoscopy stages, that we describe, can be used as an important non-invasive method for early diagnosis and better managements of each of the described cases of this stigmatizing and fibrotic potential disorder.

[66]
Trichoscopic assessment of donor area and safe zone in different age groups of men undergoing hair transplantation procedure

Madhulika Mhatre (India)

Hair transplantation is a time-tested, highly effective, permanent and natural method of improv-

ing male-pattern baldness. Introduced by Normal Orentreich more than half a century ago, it is the current forerunner in the surgical armamentarium for patterned, unpattern and even cicatricial alopecias. Improvements in transplantation technique continue to be developed, requiring one to keep abreast of changes in the field in order to provide patients with the best hair coverage possible, while maintaining a natural appearance. The ability to achieve a full cosmetic benefit depends upon a number of factors, including proper patient selection and accurate assessment of the patient's donor supply, and assessment of the safe zone for harvesting. In our study, we trichoscopically assessed the variations in safe zone and donor area hair density and follicular unit density with respect to the number of grafts as well as Single hair vs. Multi-hair grafts in four groups of individuals — between 20−30 years, 30−40 years, 40−50 years and 50−60 years. Data distribution was done in terms of single hair and multi-hair follicular unit grafts, and additionally, in terms of age, and analyzed. We propose that these findings will assist the operating surgeon in approximating the possible graft availability and extraction, prior to surgery and enable him to plan the surgery, design the hairline, and assess viability of future sessions with accuracy and ease.

[67]

A study on the trichoscopic constellation in tinea corporis – novel, unreported signs to clinch the diagnosis in atypical presentations

Aseem Sharma, Sandip Agarwal, Rachita Dhurat, Smita Ghate (India)

Tinea corporis is a common disease that often presents atypically, beyond the classic scaly annular plaque, especially in today's era of rampant topical steroid abuse. The absence of a rapid, reliable, confirmatory test, coupled with non-specific presentations, can lead to delayed or misdiagnosis. Diagnostic trichoscopy can identify different structures and colors, not visible to the naked eye, which facilitate the diagnosis of tinea corporis as a fast, non-invasive, reliable, and inexpensive method. Trichoscopic patterns have been studied extensively in tinea capitis, but not in tinea corporis (TC), and through this study we aim to establish certain characteristic trichoscopic features and novel signs, seen in this common superficial dermatophytoses, which have not been described, hitherto. Trichoscopic analysis was done using Dinolite video dermoscope, in fifty diagnosed, potassium hydroxide mount positive cases of TC. Chicago sky blue contrast stains were used to delineate the features. A 1 mm motorized punch biopsy was taken through vellus and terminal hair shafts, and stained with periodic acid schiff, wherever deemed necessary. Vellus hair involvement mandates systemic therapy by acting as a dermatophyte reservoir. Common trichoscopic findings were lusterless hair (84%) and 'peri-tubular' scaling (56%). Novel findings reported for the first time in tinea corporis included irregular dents at hair shaft (pseudomonilethrix), proximal and mid-shaft trichoptilosis; Morse code or bar code hair, serpentine hair and broken, fractured hair. Three distinct patterns of scaling were observed at the skin surface: perifollicular scaling (84%), collarette-like scaling (70%) and "dermoglyphic" scaling (42%). We propose another new sign — "brown dots": broken vellus hair at the infundibular level, akin to Black dots in alopecia areata.

Trichoscopy helps in early diagnosis and prompt treatment in cases of TC. Further studies are needed in this area to evaluate if trichoscopic changes correlate with choice of treatment, treatment resistance and treatment duration.

[68]

Trichoscopy of tinea capitis. An analytical study from Algeria

Abderrachid Bouakkaz, Attika Chibane, Assya Djeridane (Algeria)

Tinea Capitis is a benign cosmopolitan alopecic mycosis caused by dermatophytes, which mainly affects the child and rarely the adult. Trichoscopy (dermatoscopy of hair and scalp) facilitates the diagnosis of hair and scalp disorders. We report trichoscopic signs in nine cases of tinea capitis. A descriptive analytical study of eight children and one woman, who had squamous plaques of alopecia (between March 2016 and September 2017). They received a trichoscopic examination by the digital trichoscopy Denolite, and a mycological examination. Eight children between 3 and 8 years old, 6 boys, 2 girls, and 1 woman was 22-year-old. It was clinically non-cicatricial alopecia, extensive and well limited in 6 patients, and multiple small rounded or oval plaques poorly limited in 3 patients. The occipital and parietal areas of the scalp were the most commonly affected. The trichoscopic examination objectified the

presence of several aspects of the hair: In 6 cases of Microsporum canis: morse code like (MCL) in 2 (20%) cases, comma in all children (100%), black dots in 5 (84%) cases, corkscrew in 3 (50%) cases, hair in necking in 4 (66%) cases. In 1 case of Trichophyton mentagrophytes interdigitale: MCL (morse code like), comma, black dot, hair in necking In 2 cases of Trichophyton violaceum: comma (100%), black dot (100%), corkscrew (50%), question mark (50%), hair in necking (50%). Trichoscopic signs of tinea capitis are multiple. The comma hair is constant, common to the different forms (microsporic, trichophytic) of tinea capitis.

[69]
Trichoscopy as a method for determining the phase of androgenetic alopecia

Nino Khutsishvili, Nino Lortkipanidze, Lidia Rudnicka, Yuliya Ovcharenko, Irma Buchukuri, Olena Salenkova (Georgia, Poland, Ukraine)

Pattern hair loss is the most common form of hair loss in both women and men. AGA is characterized by stepwise miniaturization of the hair follicle, resulting from alteration in the hair cycle dynamics, leading to vellus transformation of terminal hair follicle. Clinically, AGA is characterized by progressive thinning, usually in a pattern distribution. The choice of treatment for AGA depends on various factors including efficacy, practicability, risks and costs. The European Dermatology Forum (EDF) has developed a comprehensive evidence-based S3 guideline for the treatment of AGA which covers all these aspects. In our opinion, it is important not only to evaluate the type and stage of hair loss, but also the phase, which can be achieved by punch biopsy and material histological research or examination by trichoscope. Our goal is to take replace biopsy, which is invasive and expensive technique, with trichoscopy, which is non-invasive method and it is comfortable for the patient and for the doctor. We already know the trichoscopy features of AGA and we can make differential diagnosis with telogen effluvium, senile alopecia, fibrosing alopecia in pattern distribution, frontal fibrosing alopecia, diffuse alopecia areata, alopecia areata incognita. The goal of the research is: 1) To make differential diagnosis of AGA and other diseases by trichoscopy; 2) To determine phases (inflammation, miniaturization, fibrosis) of AGA by trichoscopy; 3) Choosing the treatment for AGA, according the phase of the disease (A. Inflammation — topical, oral or intradermal corticosteroids, supplements, etc.; B. Miniaturization — topical minoxidil solution, oral finasteride; C. Fibrosis — hair transplantation).

[70]
Steroid-induced changes in trichoscopy of frontal fibrosing alopecia

David Saceda-Corralo, Óscar M. Moreno-Arrones, Ángela Hermosa-Gelbard, Cristina Pindado-Ortega, Ana R. Rodrigues-Barata, Sergio Vañó-Galván (Spain)

Topical corticosteroids (TC) are usually prescribed for frontal fibrosing alopecia (FFA) and some patients use them for long periods of time. The aim of this study is to identify steroid-induced changes in trichoscopy of FFA. We performed a retrospective analysis of trichoscopic images from patients with FFA that did not receive TC treatment for alopecia and a group of patients with chronic use of TC (at least 6 months every other day). All patients had been seen at the Trichology Unit of University Hospital Ramón y Cajal. Images were analyzed by three trichologists (DS, RR, SV) independently. Thirty-three lesions from 19 patients were retrieved (8 patients had never used TC and 11 referred chronic use of TC). Common trichoscopic finding of FFA were found less frequent in the TC group: perifollicular erythema (24 vs. 75%), perifollicular brown discoloration (19 vs. 67%) and peripilar casts (52 vs. 92%). Pili torti, broken hairs and black dots were present more frequently in the TC group (71 vs. 25%, 43 vs. 25%, and 14 vs. 8%, respectively). Interfollicular scales were more common in patients without use of TC (25 vs. 10%). Vascular structures were much more common in the TC group: Thin arborizing vessels (95 vs. 42%), thick arborizing vessels (67 vs. 0%), vessel net (33 vs. 0%), and extravasated hemorrhages (24 vs. 0%). Diffuse erythema was also more frequent in the TC group (67 vs. 33%). Interestingly, the chronic use of TC induced an absence of perifollicular erythema and enhanced the interfollicular vascular structures. This pattern was named the "inverse erythema" and it was found in 67% of the lesions. In conclusion, the chronic use of TC increases the presence of arborizing vessels and diffuse erythema. These changes in trichoscopy features in FFA can make difficult the correct assessment of subclinical inflammation.

[71]
Evaluation of hair loss pattern in patients with polycystic ovary syndrome using videotrichoscopy and reflectance confocal microscopy

Katarzyna Podolec, Magdalena Pirowska, Anna Wojas-Pelc (Poland)

Polycystic ovary syndrome (PcOS) is one of the most common endocrine disorders in women of childbearing age. It is characterized by menstrual disorders, difficulties in getting pregnant and changes related to hyperandrogenism. The aim of the study is to assess the occurrence of symptoms and the severity of hair loss in the group of women untreated diagnosed with PcOS using videodermatoscopy and confocal confocal microscopy. Dermatological tests were performed on a group of 40 patients with PcOS who perceived themselves as showing no obvious physical aspects of the disease. The tests were conducted before introduction of hormone therapy. In the group of examined women videotrichoscopy and reflectance confocal microscopy were conducted, and the severity of alopecia in the FPHL-SI scale was assessed. In the study group, the mean PFHL-SI results were 10, 8, with min. at level 1 and maximum 14. Trichoscopy showed the difference in hair diameter > 20% in 85%. A positive hair pull test was found in 5% of patients.

[72]
Folliculitis decalvans – diagnostic and therapeutic clues

Marlena Majkut-Sobechowicz, Adriana Rakowska, Joanna Czuwara, Lidia Rudnicka (Poland)

Folliculitis decalvans (FD) is a rare type of neutrophilic cicatricial alopecia which affects mainly the scalp. Characteristic clinical features are: erythema, exudation, crusts, erosions with characteristic tufted hairs with sensations as burning, itching or pain. Trichoscopic features are follicular pustules, yellowish tubular scaling, starburst sign, folds of epidermal hyperplasia. With disease progression milky-red or white areas corresponding to scar occur. In about 20–75% of patients, growth of Staphylococcus aureus is observed. The newest data show Propionibacterium acnes involvement in pathogenesis of FD. Reducing inflammation and preventing the scarring is the therapeutic aim. Treatment is based on clinical experience, released case reports or series of patients with FD. Antibiotic therapy seems to be the first choice of treatment, recommended especially for pustular inflammatory phase. Usually rifampicin and clindamycin or combination of rifampicin with ciprofloxacin/clarithromycin are used. Treatment might be complemented with steroids to halt cicatrization. Retinoids represent first or second line of therapy depending on the author. Retinoids are useful or mandatory when hyperkeratotic crusts are observed. In refractory cases other treatment options include: dapson, cyclosporine, iv immunoglobulins, TNF-α inhibitors, Nd:Yag lasers, photodynamic therapy or even radiotherapy. TNF-α inhibitors seem to be very promising as in other autoinflammatory diseases. Nevertheless, there are several reports showing ineffectiveness of a therapy. Every therapy has to be continued for several weeks before evaluating the effectiveness. Stem cells and bioengineering techniques might be the future treatment.

[73]
Can trichoscopy eliminate a need for scalp biopsy in frontal fibrosing alopecia?

Bartosz Miziołek, Anna Lis-Święty, Irmina Ranosz-Janicka, Grażyna Bierzyńska-Macyszyn, Ligia Brzezińska-Wcisło (Poland)

Frontal fibrosing alopecia (FFA) is an inflammatory condition of the scalp causing a band-like frontotemporal hairline recession with a loss of follicular openings in trichoscopy. Although the scalp biopsy is not necessary to establish the right diagnosis, this technique may be necessary to evaluate an activity of the disease dependent on lymphocytic cell infiltration. The objectives of the study were, to explore the value of trichoscopy for a detection of inflammation using scalp biopsy as the gold standard. Trichoscopy was performed in 22 women before tissue sampling. A presence of trichoscopic findings: perifollicular erythema (PE) and/or perifollicular scaling (PS) were later compared to intensity of lymphocytic infiltrate in scalp specimen, which was graded from none (–), through mild (+) and moderate (++), to severe (+++). All cases of FFA were divided into active (moderate or severe infiltrate) and inactive (none or mild infiltrate) disease. Histopathology (HP) recognized active disease in 14 (64%) patients and inactive in

8 subjects (36%). All of 14 patients with active lymphocytic infiltrate in HP showed PE in trichoscopy and 10 of them had concomitant PS. A coexistence of PE and PS was detectable in 2 of 8 patients with inactive disease in HP. The most sensitive indicator of active FFA was the presence of PE in trichoscopy (100% sensitivity), but its specificity was low (25%). PS was characterized by lower sensitivity (71%), but greater (50%) specificity. A look for PE with PS improved specificity (75%) not lowering sensitivity (71%) of trichoscopy, with a positive predictive value of 83%, and a negative predictive value of 60%. Trichoscopy is a useful diagnostic tool for the detection of inflammation in FFA.

[74]
Trichoscopy in unusual cases of lichen planopilaris

Justyna Skibińska, Adriana Rakowska, Marek Opala, Malgorzata Olszewska, Lidia Rudnicka (Poland)

Trichoscopy is a diagnostic method which is very useful in making the clinical diagnosis of lichen planopilaris. The aim of the study was to retrospectively analyze trichoscopy results in a group of patients with unusual clinical forms of lichen planopilaris. A total of 8 patients (7 women and 1 man, mean age 45 years, age range 27−76) were included in the study. All patients showed either an atypical course of isolated lichen planopilaris or coexistence with another inflammatory scalp disease. In 2/8 patients the clinical diagnosis of ulcerative lichen planus was established, in 5/8 patients features of overlap of lichen planopilaris and discoid lupus erythematosus were described. In one case (1/9 of patients) coexisting fold of non-scarring alopecia was observed. In all (100%) patients trichoscopy revealed severe tubular scaling around hair follicle openings. In 2/8 (25%) patients elongated vessels around hair follicles were observed and in 4/8 cases (50%) perifollicular violaceus skin discoloration was seen. In 5/8 (63%) cases features of coexisting discoid lupus erythematosus were observed, such as yellow dots (2/8, 25%), arborizing and serpentine-like blood vessels(3/8, 38%) and scattered brown skin discoloration (2/8, 25%). In 2/8 (25%) patients with ulcerative lichen planus yellow rectangular structures were seen and in 1/8 (13%) case features of coexisting fold of triangular alopecia — multiple short hair stems in the center of lesion and normal hair units at the edges were observed. Perifollicular scaling is the most sensitive trichoscopy feature, which allows identification of lichen planopilaris of unusual clinical presentation.

[75]
Trichoscopic features in tinea capitis

Asmahane Souissi, Najla Daadaa, Nourchène Toukebri, Fatma Jendoubi, Mehdi Karray, Mourad Mokni (Tunisia)

Several dermoscopic appearances of the hair shaft are described in tinea capitis (TC). We conducted a retrospective study in patients with TC over a period of 6 months at the department of Dermatology La Rabta Hospital of Tunis. All patients underwent trichoscopic examination and mycological culture was performed. Six boys and two girls were examined. Their age ranged from 3 to 12 years. The duration of the lesion(s) ranged from few days to 3 years. Six patients had non-scarring patchy alopecia, and 2 had inflammatory lesions. All patients had positive mycological cultures: 3 microsporic TC (M. canis) and 5 trichophytic TC (T. tonsurans, T. violaceum, T. verrucosum, T. mentagrophytes). Comma hairs (CH) were found in 4 patients affected by M. canis, T. verrucosum, T. tonsurans or T. violaceum. Corkscrew hairs (CSH) were found in 4 children. These include one patient with M.canis and three patients with T. tonsurans and T. violaceum. Other dermoscopic findings were detected: zigzag hairs (3 cases), broken hairs (BH) (5 cases), black dots (BD) (5 cases), white scales (3 cases), white sheaths around proximal hair shafts in 2 patients, hemorrhagic suffusions in 4 patients and pustules in one patient. BH and BD, which are non-specific trichoscopic finding of TC, are the most features found. However, CH, zigzag shaped hairs, or CSH, characteristic trichoscopic features of TC are less frequent. This could be explained by the relatively long duration of lesions in our patients. Thus, comma hairs and corkscrew hairs are often associated with the early stages of the infection, while in contrast, broken hairs and black dots probably indicate an advanced stage of tinea capitis.

[76]
Trichoscopy in frontal fibrosing alopecia. What is beneath the hair line?

Adriana Rakowska, Anna Waśkiel, Mariusz Sikora, Małgorzata Olszewska, Lidia Rudnicka (Poland)

Frontal fibrosing alopecia is a primary lymphocytic cicatricial alopecia with progressive frontotemporal hairline recession. In some cases, hair loss in mid-frontal scalp, similar to female pattern hair loss, may be observed (53% in presented study). Objectives: Assessment of trichoscopy pattern of mid-frontal scalp hair loss in patients diagnosed with frontal fibrosing alopecia. Retrospective analysis included 31 women diagnosed with frontal fibrosing alopecia, who also presented hair loss in mid-frontal scalp area. In patients with frontal fibrosing alopecia two different trichoscopic patterns in the mid-frontal scalp were identified. In 68% of patients (21/31) we observed a diffuse fibrotic pattern. It was characterized by irregular arrangement of follicular units with small areas with loss of follicular units, an increased percentage of follicular units with one hair and a decreased percentage of follicular units with three hairs, normal hair shaft thickness and presence of mild perifollicular scaling. The androgenetic alopecia pattern was present in 32% of patients (10/31). It was characterized by hair shaft thickness diversity (20% or more), a percentage of vellus hairs higher than 10%, presence of yellow dots, an increased percentage of follicular units with one hair and a decreased percentage of follicular units with three hairs. In patients with frontal fibrosing alopecia and coexisting mid-frontal scalp hair loss, two different trichoscopic patterns were identified: the diffuse fibrotic pattern (more common) and the androgenetic alopecia pattern. This observation may have therapeutic and prognostic implications.

[77]
Dermoscopy of scalp actinic keratosis

Tatsiana Damps, Olga Warszawik-Hendzel, Małgorzata Olszewska, Lidia Rudnicka (Poland)

Actinic keratosis (AK) is a common precancerous lesion on sun damaged skin that may progress to invasive squamous cell carcinoma. It is usually diagnosed based on clinical appearance. Although the gold standard of diagnosis for AK is invasive biopsy followed by histopathological evolution, minimally invasive diagnostic tools have obtained increased attention. Videodermoscopy is a non-invasive diagnostic method based on the analysis of the magnified image of the skin in the side light. Videodermoscopy images of AK demonstrated red pseudonetwork, linear-wavy vessels surrounding the hair follicles, presence of prominent follicular openings surrounded by a white halo and targetoid hair follicles. Actinic keratosis typically develops on chronically sun-exposed skin areas including scalp especially in bold elderly men. Videodermoscopy images of actinic keratosis show the presence of characteristic features, which may be utilized for improving the clinical evaluation of actinic keratosis and may be helpful in differentiating AK from non-melanoma skin cancer.

[78]
Early stage scarring alopecia as potentially reversible process

Jekaterina Pudova, Kristina Nevidovska (Latvia)

In humans, hair follicle neogenesis occurs almost exclusively in utero. In adults, no new hairs form except to a very limited extent following skin wounding. No currently available treatment will stimulate hair follicle neogenesis. Trichoscopy (dermoscopic examination of scalp and hair) is a very useful technique for the diagnosis and follow-up of hair and scalp disorders. A 53-year-old Caucasian woman presented to the dermatology clinic with complain about bald patch on the scalp (vertex region). Initially, about 3 weeks before, she developed painful lesion without preexisting trauma or other noticeable event and got broad-spectrum antibacterial treatment at the ambulance suspecting scalp bacterial infection and ketoconazole shampoo (although bacterial and fungal sampling wasn't performed on site). During antibacterial therapy lesion spontaneously drained and after 1 week patient experienced hair fall in a patch pattern. Clinically she got 4 cm bald patch with visible skin infiltration, red to violaceus color in the central part. Trichoscopically some broken hairs were seen, in the central milky-red area — several white dots and fibrotic regions, black dots within yellow dots (some of yellow dots appear as 3D soap bubbles containing hair residue). Mild superficial and perifollicular scaling was seen. Another 5 mm bald patch was found on the occipital part of the scalp. Trichoscopically light yellow area with no

follicular openings, one black dot at the periphery and few vellus hairs. A 5-mm punch biopsy of the scalp was performed. Histology showed a thin layer of hyperkeratosis, thin parakeratosis, epidermis with a preserved structure, without vacuolar keratinocyte changes in the basal layer of epidermis. Hair follicles were enlarged, filled with keratin masses in the ostia. In the upper, medial and deep layers of derma capillaries were surrounded with lymphocytes, macrophages and multicellular foreign body cell. In the deep layers of the dermis were few small-size follicles with signs of destruction in the center of hair remnants. Intraepithelial multiple neutrophils, eosinophils and spongiosis; perifocally macrophage complexes, lymphocytes and multicellular cell. In place of a previously existing hair follicle, fibrous tract was found. Morphologicaly deep scarring folliculitis (should be differentiated between folliculitis decalvans and dissecting cellulitis). According to Rudnicka *et al.* folliculitis decalvans is characterized by tufted hairs, large follicular pustules with emerging hair shafts and perifollicular starburst pattern hyperplasia. In dissecting cellulitis characteristic findings are "3D" yellow dots imposed over dystrophic hairs, large, yellow amorphous areas and pinpoint white dots with a whitish halo. Trichoscopic findings in lesion were more typical for dissecting cellulitis then folliculitis decalvans. Clindamycin solution was prescribed twice a day for 10 days post biopsy, later to continue with calcipotriol/betamethasone 50 μg/0.5 mg/g gel at the nighttime for 4–6 weeks. During all therapy, ketoconazole shampoo was used. Occipital patch left untreated. Five weeks later she came to follow-up. In the center of the patch dark regrowing hair was seen, pigtail hairs, some broken and twisted hair and empty follicles were at the periphery. Patient got intralesional injections at the lesion periphery with 5 mg/ml triamcinolone acetonide. In 2 months, on follow-up visit, complete hair regrowth was seen without any trichoscopic changes indicative for scaring alopecia. Although dissecting cellulitis is typical for black men we present the case of a Caucasian female patient having typical clinical, trichoscopic and histological features for this disease. Opposite to typical disease outcome with scarring patches, we achieved complete regrowth of a bald patch with typical trichoscopic and histological features for cicatricial alopecia.

[79]
Trichotillomania in a 69-year-old woman

Radomir Reszke, Kalina Welz-Kubiak, Adam Reich, Jacek Szepietowski (Poland)

Trichotillomania is an impulse control disorder in which patients tend to repetitively pull out their hair which leads to visible hair loss in various regions, especially in the scalp. Psychiatric comorbidities such as anxiety, mood or substance use disorders are relatively common in these patients. A 69-year-old woman was admitted to our Department due to focal hair loss of 6 months' duration. The patient reported recent death of her husband, with subsequent psychiatric diagnosis of adjustive disorder and the treatment with escitalopram and trazodone which were later discontinued. Upon clinical examination, irregular areas of alopecia in parietal and occipital region were observed, along with erosions covered with crusts. Trichoscopic examination revealed broken hairs of variable length, trichoptilosis, coiled hairs and a V-sign. A diagnosis of trichotillomania was established. Consulting psychiatrist diagnosed adjustive disorder and we instigated treatment with trazodone and topical preparations. Unfortunately, the patient did not attend the follow up visit. Trichotillomania is a relevant entity in psychodermatology, including elderly patients. The disorder has to be included in the differential diagnosis of unexplained alopecia, especially in the presence of relevant psycho-social background in an affected individual, as well as characteristic clinical and trichoscopic features.

[80]
Atrichia, keratosis follicularis and coloboma

Sanita Zigure, Jekaterina Pudova (Latvia)

We report a case of atrichia in a 7-year-old girl. She had scant scalp hair at birth, which according to parents was lost within first months. Eyelashes and eyebrows were preserved but sparse. Her skin since birth was dry and rough. These patients have normal development, hearing, teeth and nails. There are no abnormalities of sweating. Heterozygous individuals have normal hair and are clinically indistinguishable from genotypically normal persons No histologic examination was performed. Genetic studies

could not be performed owing to lack of facilities and financial constraints. Trichoscopically short terminal and vellus hair were seen, 2-5 pinpoint white dots were seen around all hair follicles, some broken hairs were found on the scalp, eyebrows were with no specific trichoscopic changes. Pull tests was positive. Microscopically all hair showed dystrophic roots. We managed the patient with topical emollients and keratolytics. No systemic treatment was performed yet. Our patients met two out of five major criteria and two minor criteria for the diagnosis of atrichia congenita. As patient has extensive follicular keratosis diagnosis should be differentiated from keratosis follicularis spinulosa decalvans. It is very essential to distinguish different diseases that appear with atrichia for the correct prognosis and therapy selection.

[81]
Cicatricial alopecia as a manifestation of breast cancer metastases. Clinical features and trichoscopic findings

Magdalena Jasińska, Barbara Borkowska, Martyna Kamont, Justyna Sicińska (Poland)

Cancer metastases may be a cause of secondary cicatricial alopecia. Trichoscopy is a noninvasive diagnostic tool, which has become very important in the diagnosing of patients with scalp disorders. We described a case of 51-year-old woman with a one-year history of persistent hair loss, who was diagnosed with breast cancer 5 years earlier. Clinically, the patient presented a large area of cicatricial alopecia on the vertex of the scalp. Multiple blood vessels were visible through the semi-translucent skin. During trichoscopic evaluation we observed: a network of thick arborizing and root-like vessels, linear serpentine vessels, white and milky red areas of fibrosis and lack of follicular openings. Histopathology showed carcinomatous infiltration into the scalp. The trichoscopic features of thick arborizing and root-like vessels, serpentine vessels, white and milky red areas of fibrosis may indicate alopecia secondary to cancerous infiltration.

[82]
Difficult to diagnose case of alopecia after prolonged use of topical glucocorticoids

Joanna Czuwara, Leszek Blicharz, Adriana Rakowska, Lidia Rudnicka (Poland)

Several hair loss patterns can be difficult to diagnose on the first sight. It can be due to: 1) different types of alopecia coexistence in one patient leading to heavy hair loss; 2) side effects of topical or systemic treatment; 3) uncharacteristic clinical presentation with trichoscopy findings. We present a 61-year-old caucasian woman otherwise healthy, who referred to our clinic with severe hair loss which started in April, four months prior. The patient had been using only prescribed topical glucocorticoids daily with increasing potency (from mometasone to clobetasol) without improvement. She complained of stinging, burning and irritation of her scalp and hair thinning on her forehead, temples and vertex indicating androgenetic alopecia (AGA). Her skin was inflamed with a demarcated border where the hair line began. Trichoscopy revealed numerous yellow dots, thin hairs, low hair density, heterogeneity of hair shafts thickness as it is in AGA. But her scalp was dry and scaly with follicular plugging, many irregular, dilated blood vessels and peripilar sign. Inflammatory diseases such as psoriasis, early discoid lupus erythematosus, seborrheic dermatitis, follicular mucinosis were considered. Scalp biopsy revealed miniaturized hairs and telogen shift without inflammatory infiltrates indicating coexistence of two processes, advanced androgenetic alopecia and acute telogen effluvium. Based on this case, it is important to know, prolonged use of potent topical glucocorticoids on the scalp can lead to very misleading symptoms, dry skin, irritation and risk of superinfection. Anti-inflammatory properties of steroids can hide the real cause of hair loss. They should be used as additional therapy if needed, after diagnosis establishment.

[83]
Trichotillomania. Diagnostic difficulties.

Ida Yurtsever, Małgorzata Kwiatkowska, Magdalena Jasińska, Barbara Borkowska, Patrycja Wiślińska, Julia Lanckorońska, Irena Walecka, Martyna Kamont (Poland)

Trichotillomania is an impulse control disorder. Patients do not resist pulling their own hair, which results in considerable hair loss. Psychiatric comorbidity in adults appears to be very common. Trichotillomania is estimated to affect 1−3.5% of young adults. There is wide variety of treatment options including behavioral therapies and psychiatric medications. Diagnosis of trichotillomania can be challenging especially in patients who are not aware of their condition. A 38-year-old female patient presented with notable hair loss of temporal and parietal area of 5 month duration. No other accompanying symptoms were reported. Patient negated damaging her own hair. On examination hair loss of temporal and parietal area was observed. Trichoscopy revealed multiple broken hair, singular zigzag hair and one flame hair. No other trichoscopic features of hair pathology nor skin involvement was observed. Patient was referred to further observation. We describe a patient with atypical trichoscopic image of trichotillomania. Presented case underlines the diagnostic difficulties in case of trichotillomania.

[84]
Sebaceoma in the scalp simulating melanocytic malignant cutaneous neoplasm

Daniel Fernandes Melo, Thaís Roberta Ura Garcia, Bárbara Catojo Poggi, Juliana Marques da Costa, Maria Auxiliadora Jeunon Sousa (Brazil)

Sebaceoma was also called sebomatrixoma or sebaceous epithelioma and in 1984 it is classified as a benign neoplasia with sebaceous differentiation. It manifests as a yellowish or orange, solitary or multiple hemispheric tumor lesion localized in the seborrheic areas of the body and affects women in the eighth decade of life.

An 80-year-old patient, with antecedents of an endometrial cancer developed a blackened nodular lesion with erythematous base and central crust at the apex of the scalp. Trichoscopy shows yellowish erythematous area, hematic crust, red milky area, polymorphous vessels and yellowish globules, suggesting the diagnose of a sebaceous tumor. The presence of whitish veil, white-shiny area, asymmetric follicular openings and rhomboidal structures did not allow to exclude cutaneous melanoma. An excisional biopsy was performed with small margins and the pathology established the diagnosis of sebaceoma, setting up the Muir Torre Syndrome. According to the literature, sebaceomas dermoscopy may present a homogeneous translucent yellowish erythematous area with or without ulcerations, presence of arboriform vessels that may be arranged at the periphery of the lesion and which branch out centripetally. The homogeneous yellowish-erythematous area may be an important finding to indicate the sebaceous nature of the lesion.

Tricoschopy is an excellent tool for the definition of these cases, since it is a non-invasive technique and with well-established standards for the diagnosis of malignant or benign lesions, pigmented or not. However, some lesions present uncommon findings or simulate malignancy and histopathological exam is necessary to confirm the diagnosis.

[85]
Trichotillomania in children

Olivia Komorowska (Poland)

Trichotillomania is characterized by excessive uncontrolled hair pulling resulting in noticeable hair loss. The disease can occur on the scalp, as well as on the eyebrows and eyelashes. Trichotillomania belongs to the group of obsessive-compulsive disorders. Increased nervous tension and stressful events are reduced by hair pulling and give the patient temporary relief. Trichotillomania is more common in teenagers and young adults and tends to affect girls more often than boys. Diagnosis is based on the medical history and examination of the suspected areas. Trichoscopy is a crucial to confirm the diagnosis of this chronic condition. Treatment of patients with trichotillomania is based on psychotherapy. In severe cases of trichotillomania medications decrease anxiety are recommended. We present two cases of trichotillomania in 6- and 14-year-old female patients presented with clinical and trichoscopic features of trichotillomania.

[86]
Alopecia areata and comorbidities. A series of patients

Beata Polkowska-Pruszyńska, Agnieszka Gerkowicz, Aleksandra Walczak, Dorota Krasowska (Poland)

Alopecia areata (AA) is a common non-scarring hair condition of genetic and autoimmune etiology. The autoreactive lymphocytes T affect anagen hair follicles causing oval well-circumscribed patches of hair loss. The disease can present itself as few or multiple hair-loss patches, the loss of all scalp hair and the loss of all scalp and body hair. AA often coexists with autoimmune, inflammatory, metabolic, neuropsychiatric and cardiovascular disorders. We present a case series of patients with chronic and refractory to previous therapy AA presenting common comorbidities (anemia, vitamin D deficiency, diabetes, thyroid disorders, Addison disease). In all patients trichoscopy demonstrated typical findings for AA. In several cases the dermoscopic examination of the scalp revealed also non-characteristic changes (e.g. dryness of the scalp, brown scalp hyperpigmentation). One of the possible reasons for the observed symptoms could be the presence of concomitant diseases diagnosed earlier. All patients received topical high potency steroids, anthralin, minoxidil, hair growth stimulating lotions and the treatment of coexisting disorders was introduced, which presumably positively influenced the hair regrowth. The proper management of AA patients should focus both on the treatment of hair loss as well as on active search and therapy of the comorbidities. Trichoscopy may be useful in this process.

[87]
Trichoscopy findings in trichotemnomania in an adolescent patient – case study

Aleksandra Kobusiewicz, Katarzyna Tomaszewska, Anna Zalewska-Janowska, Andrzej Kaszuba (Poland)

Trichotemnomania is a form of self-inflicted disease. The cause of the disorder is obsessive compulsive habit or intentional, repetitive shaving or cutting hair by the patient. A healthy, 16-year-old girl was admitted to the Dermatology Clinic due to sudden hair loss that started at night before admission. Dermatological examination with oval patches of hair loss on the frontoparietal and parietotemporal areas of the scalp and the loss of the outer part of the right eyebrow suggested recognition of alopecia areata. The hair pull test was negative. In the trichoscopy examination, hair follicles were filled with hair shafts presented as black dots and showed sharp cut surfaces. The scalp was healthy, without inflammation, desquamation and scarring. No pathological vessels were found. On the basis of the trichoscopic features and course of the disease, a diagnosis of trichotemnomania was made. The patient denied compulsive cutting or shaving of her hair. During the psychological consultation, the patient admitted to intentional self-injury as a form of "crying for help" after traumatic experiences at school. The clinical picture and the psychological interview correspond to a form of factitious disorders. Trichotemnomania is a rare disorder in the psychiatry spectrum and should be distinguished from trichotillomania. Due to the simulation of skin diseases, patients are often presented to dermatologists, neglecting psychological help. Non-judgmental approach, establishing a doctor — patient relationship and cooperation with interdisciplinary team (dermatologist, psychiatrist and psychologist) may result in a therapeutic success.

[88]
Trichoscopic findings in neoplastic alopecia from metastatic breast carcinoma

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Neoplastic alopecia (alopecia neoplastica, AN) is a well-known but unusual presentation of cutaneous metastases to the scalp. It presents as solitary or multiple patches of scarring hair loss. We describe the tracheoscopy features found in a case of AN due to breast carcinoma, which helped in making the diagnosis.

A 60-year-old woman was referred to the dermatology outpatient clinic with a three-month history of asymptomatic hair loss. She had a personal history of stage IV breast cancer. The patient participated in a clinical trial in which she received treatment with MLN0128 molecule and fulvestrant. Physical examination revealed four, oval shaped, alopecic patches, with central erosion, on both parietal regions of the scalp. The hair-pull test was negative. There were no mucosal or nail abnormalities. Other physical exami-

nations were unremarkable. Trichoscopic examination showed loss of follicular ostias and linear-irregular vessels converging in the center of the alopecic patches. The differential diagnosis included alopecia neoplastica due to cutaneous metastases, discoid lupus erythematosus and trichotillomania. Histological examination showed a diffuse infiltration of the dermis and hypodermis by a cancerous proliferation of cells surrounded by dense collagenous stroma. Immunohistochemical study revealed estrogen receptor and GATA-3 expression, which confirmed the diagnosis. The scalp is a common site for metastatic disease because of its rich blood supply. Nodules are the most common clinical presentation while AN is extraordinary. The mechanism underlying AN is not entirely clear. Follicular atrophy may be due to the tumor invasion of the scalp. In addition, the fibrosis induced by the cytokines released by the tumoral cells may play a role in the development of the alopecia. Trichoscopic features of AN have not been reported previously. In our case, the presence of tortuous vessels was consistent with the dermoscopic description of aberrant vascularization of cutaneous metastases in other locations. The recognition of these trichoscopic findings can be of great help in the diagnosis of this type of alopecia.

[89]
Langerhans cell histiocytosis – features in dermoscopy

Małgorzata Orylska, Agnieszka Owczarczyk-Saczonek, Waldemar Placek (Poland)

Langerhans cell histiocytosis (LCH) is a multisystem disorder of unknown etiology and characterized by accumulation of histiocytes in various tissues. It is a rare, heterogeneous disorder with highly variable presentation. LCH commonly affects the skin, as well as internal organs. Because the skin lesions appear benign, and LCH is unfamiliar to most physicians, diagnosis is often delayed. We present 30-years-old patient with 1-year history of itching atypical lesions on scalp. Cutaneous examination revealed scaly, erythematous patches mostly eroded with serous crust. A skin biopsy of the affected area confirmed the diagnosis. In dermoscopy we described brown dots and reddish-blue irregular areas with central whitening. We describe dermoscopic features which may help to diagnose Langerhans cell histiocytosis or differentiate it from seborrheic dermatitis, atopic dermatitis, folliculitis decalvans.

[90]
Pressure alopecia: two cases with thin hairs on trichoscopy

Daniel Fernandes Melo, Violeta Tortelly, Beatriz Ghedin (Brazil)

Pressure alopecia is a localized hair loss caused by prolonged pressure exerted on the scalp. It is an uncommon complication due to immobilization of the head that usually occurs after surgeries, however, non-surgical procedures can also trigger it. It occurs in adults and more rarely in children, but they are more likely to develop necrosis, ulceration, and local fibrosis. The etiology of pressure alopecia appears to be due to local tissue hypoxia and systemic hypoperfusion. The most important risk factors are surgeries that last more than four hours and are performed under general anesthesia. The prognosis is usually good, with spontaneous hair growth in approximately four months, but some cases are irreversible, especially in procedures that last more than 24 hours. A biopsy is often not needed when the medical history and physical examination are compatible. We report two cases of postoperative pressure alopecia of a 56-year-old woman and a 2-year-old child in whom we observed the most described trichoscopy findings such as broken hair and black spots. However, in both cases, there was also mild erythema on the plaque and residual thin hairs throughout the affected area. We questioned the reason for the maintenance of thin hairs: it would be because they were smaller, and with less metabolic demand, they would better resist local hypoxia or because they had the most superficial bulb in the skin, a deeper vascular alteration plays an important role in the etiology?

[91]
Early diagnosis and prompt treatment improves quality of life in patients with frontal fibrosing alopecia

Rachita Dhurat (India)

Frontal fibrosing alopecia (FFA) is a relatively recently described condition which was first described in 1994. Frontal fibrosing alopecia is an uncommon primary lymphocytic cicatricial alopecia of unknown origin, affecting the frontal hairline of postmenopausal women. It has an early Inflammatory stage

which slowly progresses to stage of fibrosis. Case 1. A 47-year-old menopausal female with areas of hair loss over bilateral frontotemporal, occipital areas of scalp and over lateral eye brows in the past one year. Hair line recession was present on fronto-temporal as well as occipital sides. Hair pull test was negative from the scalp. Differential diagnosis of alopecia areata and frontal fibrosing alopecia were considered. Trichoscopic examination of affected scalp revealed markedly reduced follicular ostia, perifollicular erythema, cast and lonely hair. Differential diagnosis of alopecia areata and frontal fibrosing alopecia were considered. Histopathological examination revealed follicular plugging, diffuse fibrosis in upper dermis with one follicle showing basal cell vacuolization and mild perifollicular lymphocytic infiltrate. Atrophic sebaceous glands were noticed. Intralesional steroid injections were given every four weeks for twelve weeks. Marked improvement was present after twelve weeks. Case 2. A 57-years-old menopausal female with preceding frontal hairline with loss of eyebrows in the past ten years. The skin over alopecia patch was shiny and smooth. Trichoscopy of affected scalp revealed loss of follicular openings, perifollicular erythema and lonely hair. Histopathological examination of biopsy sample from alopecia patch revealed absence of perifollicular inflammatory infiltrate with predominance of perifollicular lamellar fibrosis. Apoptotic keratinocytes in outer root sheath were seen. A diagnosis of frontal fibrosing alopecia was made. Patient reported regression of symptoms and arrest of recession of hair line but no hair regrowth with intralesional steroid. Case 3. A 38-years-old female patient with hair loss over bitemporal area in the past 2 months. She was misdiagnosed as alopecia areata. Trichoscopic examination revealed absence of follicular openings, peri follicular erythema and scaling. FFA can be confused with alopecia areata or androgenetic alopecia but trichoscopy can be a helpful diagnostic tool to differentiate FFA with these conditions avoiding misdiagnosis. Intralesional steroids can prove as an effective modality of treatment in FFA when offered early in the course of the disease. Our first case showed complete regrowth with intralesional injections of steroid. The possible explanation to this is that inflammatory process was arrested leading to prevention of detachment of arrector pili muscle from hair follicle. There by stem cells residing in bulge area retained their potential to regenerate hair follicle. Our second case reported regression of symptoms and arrest of recession of hair line but no hair regrowth with intralesional steroids. These case reports emphasize on the possibility of regrowth after intralesional steroids given in early stage of the disease.

[92]
Unusual patterned presentation of trichotillomania masquerading as female pattern hair loss

Nitya Malladi, Rachita Dhurat, Jill Chitalia, Sandip Agrawal, Ameet Dandale, Smita Ghate (India)

Trichotillomania is an impulse control disorder characterized by unintentional but conscious pulling out of one's own hair. It is common in children and adolescents. The scalp is the most frequently involved site, followed by the eyebrows, pubic, and other body hairs. When involving scalp, it shows an artefactually patterned, either ill-defined or sharply demarcated area of alopecia. Unusual presentation of trichotillomania may pose difficulty in diagnosis of patchy hair loss. Here we present a case of trichotillomania in patterned distribution. A 25-year-old woman presented to us with widening of central partition in the past 1 year. Patient had been suffering from multiple symptoms like headache, chest pain, breathlessness and had multiple visits to different doctors during last one year. Patient denied history of pulling her hair. No significant history of any other illness was present. On cutaneous examination, alopecic patch was present on mid-scalp simulating Christmas tree pattern of FPHL. Hair pull test was positive. On further examination, patchy hair loss was seen on eyebrows. In view of clinical features, differential diagnosis of alopecia areata and Christmas tree pattern of FPHL were kept. Trichogram didn't show increase in telogen hair count. Trichoscopy showed uneven broken off hair with few twisted hairs suggestive of Trichotillomania. Scalp biopsy revealed distorted hair canal with pigment casts clinching the diagnosis of trichotillomania. Patient was started on N-Acetyl Cysteine 600mg BD and topical minoxidil 5% OD. Trichotillomania can present in unusual patterns making diagnosis a difficult task. Trichoscopy and scalp biopsy helps to differentiate it from other hair disorders.

[93]
Trichoscopic wonder. A case of postpartum hair loss

Angela Nagpal, Rachita Dhurat, Mithali Jage (India)

Women presenting with hair loss during the postpartum period can be easily labeled as post-partum

telogen effluvium. Trichoscopy is of great help in ruling out other causes of diffuse alopecia, a major diagnostic challenge. A 28-year-old Indian woman presented with history of sudden onset hair loss in the past 1 month. She was four months postpartum and her hair fall was severe enough to make her scalp visible. She was otherwise a healthy lactating mother and gave no history of loss of body hair. Examination revealed thinning and sparseness of hair affecting the entire scalp. Hair pull test was strongly positive on the frontal and occipital region but negative from the eyebrows, eyelashes and body hair. Trichoscopic examination of the scalp showed the presence of yellow dots evident in the follicular ostium of both empty and the hair bearing follicles. Multiple vellus hair along with exclamation mark hair was also seen. Patient refused scalp biopsy. Her complete blood count, serum biochemistry tests were within normal limits, however her thyroid function test showed decreased T3 levels, highly elevated TSH level, antithyroid peroxides (TPO) antibodies and anti-thyroglobulin antibodies She was diagnosed as alopecia areata incognita with autoimmune thyroiditis and treated with class I topical steroids, clobetasol propionate 0.05% everyday application. She showed good response within a month, with further improvement at 2 months and 4 months. Alopecia areata incognita is a very rare entity in which hair thinning is seen subtly distributed throughout the scalp. Trichoscopy aids in diagnosis of this disorder. Therefore, unnecessary investigations can be avoided.

[94]
Trichoscopy in alopecias

Angela Nagpal, Rachita Dhurat, Mithali Jage, Sandip Agrawal (India)

Trichoscopy is an effective, reliable, handy and noninvasive diagnostic tool. Awareness of various trichoscopic patterns is of great help in confirmation of diagnosis especially when faced with diagnostic difficulties. First case: a young married female presented with a single 2 × 3 cm patch of alopecia in frontal scalp for 1 month. On dermoscopy, hair with hyperpigmented distal ends (tulip hair) and vellus hair were seen, hence provisional diagnosis of trichotillomania was made. A 4 mm punch biopsy was taken which showed mild peribulbar infiltrate with catagen hair and few apoptotic cells thus the final diagnosis of alopecia areata was made, thereby stressing on the important fact that tulip hair is not specific for trichotillomania. Second case: a 14-year-old boy presented with multiple non-scaly, partially treated patches of alopecia for 4 months. On trichoscopic examination, comma hair was seen, which on KOH examination showed fungal spores. Hence final diagnosis of tinea capitis was made, thus demonstrating the effectiveness of trichoscopy in collection of appropriate hair sample for KOH examination. Third case: a 23-year-old male presented with dark itchy lesion over scalp for 3 years. On examination a single hyperpigmented plaque present over occipital area scalp. Dermoscopic examination of the scalp showed broom hair fibers: numerous short hairs split into two or three hairs of similar thickness at the level of their emergence of the follicular opening and additionally split into two or three tiny hair endings at the distal tips. Broom hair on dermoscopy can be an important tool in diagnosis of lichen simplex chronicus of scalp. Trichoscopy is a valuable tool and these novel trichoscopic findings are of great value in clinical diagnosis

[95]
Trichoscopy in diagnosis and monitoring of tinea corporis caused by Trichophyton tonsurans

Justyna Sicińska, Magdalena Jasińska, Barbara Borkowska, Irena Walecka (Poland)

For years, dermatophyte Trichophyton tonsurans has been associated mainly with "black dot" tinea capitis in children. However, tinea corporis caused by T. tonsurans appears one of common skin infections in adult wrestlers and combat sports club members. We report a case of a 42-year-old combat sport instructor who, similarly to his sport club colleagues, developed pruritic erythematous-desquamating lesions with localized body hair loss after international sport meeting. Skin lesions were mainly present on forearms and appeared to be resistant to initially administered topical therapy with antifungals. Upon examination, dermoscopy revealed numerous black dots, broken hairs, comma hairs on an erythematous skin with single pustules. Intensity of hair damage corresponded with skin inflammation symptoms. Successful therapy with oral terbinafine and topical mometasone and terbinafine creams resulted in complete clinical, dermoscopic and mycologic cure. In this work, dermoscopy is presented as an easy tool for diagnosing and monitoring T. tonsurans tinea corporis which is especially important due to high possibility of its easy transmission in certain environments.

[96]

Ingrown hairs: a recurrent trichoscopic feature in scarring alopecias

Ingrid Tavares, Flávia Weffort, Bruna Duque-Estrada, Danielle Quintella, Tullia Cuzzi, Rodrigo Pirmez (Brazil)

Trichoscopy is a useful noninvasive technique for the evaluation of patients with hair loss, allowing magnified visualization of the hair and scalp skin. It is a valuable tool to distinguish scarring from non-scarring alopecias. The iam of the study was to assess the presence of ingrown hairs as a trichoscopic feature of scarring alopecias. We performed a retrospective analysis of images and medical records from patients presenting with ingrown hairs under scalp trichoscopy. Trichoscopy and photographic documentation were done using either FotoFinder Dermoscope® or FotoFinder Handyscope® (Teachscreen Software, Bad Birnbach, Germany). A total of 20 cases of patients presenting ingrown hairs were recovered. All patients had primary scarring alopecia. In 4 patients, trichoscopy-guided biopsies of an ingrown hair had also been performed. Biopsies revealed hair follicles with thinned outer root sheaths transfixed by hair shafts, associated with giant foreign body type reaction. It is our impression that follicular damage in scarring alopecias is responsible for the recurrent trichoscopic finding of ingrown hairs. Further studies analyzing the exact frequency of this trichoscopic feature in scarring alopecias are needed.

[97]

Follicular keratosis spinulosa decalvans in infants (contribution of trichoscopy)

Attika Chibane, Toufik Tounsi, Nabila Merah, Assya Djeridane (Algeria)

Follicular keratosis spinulosa decalvans is a disease rare, often linked to the X chromosome, which affects the skin and the eyes characterized by varying degrees of inflammation and atrophic scarring. Scarring alopecia usually sets in puberty. We report an unusual case of scaling hair keratosis associated with malformation syndrome (hypospadias, cryptorchidism) early onset in an infant. A 1-year-old boy, consulted in dermatology for alopecia evolving since the age of 6 months. the only child in the family. from a consanguineous marriage with normal pregnancy and delivery. the physical examination revealed: a normal physical, mental development, and a cicatricial alopecia of the vertex with peripheral keratosis pilaris associated with an ophryogenes ulerythema, a rarefaction of the eyebrows, and keratosis lesions pilaris of the arms and trunk. In addition, he had genital malformations such as hypospadias, and cryptorchidism. The mother brought back a notion of photophobia in the child. There were no similar cases in the family. Trichoscopic examination: found a rarefaction of the follicular orifices, and lesions of keratosis pilaris on the periphery of the alopecia surrounding the hair. The cicatricial appearance of alopecia, diffuse hair keratosis lesions, sparse eyebrows, ophryogenes ulerythema, and trichoscopic signs all contributed to the diagnosis of keratosis pilaris decalvans. Isotretinoin at an oral dose of 0.25 mg/kg daily may was started. In conclusion, keratosis pilaris decalvans can occur early in an infant. It should be and to look for a possible malformation.

[98]

Analysis of trichoscopic signs observed in 24 patients presenting tinea capitis. Hypotheses based on physiopathology and proposed new classification

Yazid Bourezane (France)

Trichoscopy (hair dermoscopy) is a non-invasive and very useful technique for the diagnosis and follow-up of hair and scalp disorders. In tinea capitis, specific aspects of the hair shaft have been described, the main ones are: comma hair, corkscrew hair, bar code-like hair (CCB) and zigzag hair (CZZ). We report a retrospective study of 24 patients with tinea capitis (TC). All patients had trichoscopic examination and myologic culture. Trichoscopy was abnormal in all the 24 patients showing hair shaft abnormalities. We observed three types of images depending on the nature and the mechanism of infection and discuss the different trichoscopic aspects of the hair shaft (comma hair, corkscrew hair, bar code-like hair, zigzag hairs, broken hairs and black dots) resulting from 3 mechanisms of penetration of the fungus in the Hair shaft (endothrix, ectothrix and ectoendothrix). All patients had positive mycologic cultures: 15 with trichophytic TC (8 with T. tonsurans, 5 with T. sudanese and 2 with T. verrucosum) and 9 microsporic TC (7 with M. audouini, and 2 with M. canis).

We propose for the first time, to our knowledge, a classification of trichoscopic signs of TC. This classification will allow us a quick diagnosis and a prediction of the nature of the fungus before mycologic culture. Our study shows the importance of trichoscopy in the diagnosis and monitoring of TC and his very good correlation with mycologic cultures. We propose a new classification of trichoscopic signs dependent on the nature of mycologic agent and the mechanism of infection. Further prospective studies with more patients are necessary to confirm this classification.

[99]
Black dots. A common finding in trichoscopy

Justyna Sicińska, Magdalena Jasińska,
Barbara Borkowska, Irena Walecka (Poland)

Trichoscopy (hair and scalp dermoscopy) enables analysis of scalp and hair shafts, providing clues for fast and non-invasive diagnosis of numerous skin conditions. Black dots which correspond to minute fragments of hair shafts located in follicular ostia are considered a hallmark of alopecia areata but have also been reported to be a common finding in dissecting cellulitis, tinea capitis and trichotillomania. In our work we present our observations of black dots in various types of alopecia, inherited hair disorders, systemic diseases as well as inflammatory skin conditions.

[100]
Trichoscopy of folliculitis decalvans. About 8 cases in Algeria

Abderrachid Bouakkaz, Assya Djeridane (Algeria)

Decalvans folliculitis is a rare form of chronic purulent folliculitis, initially described by Quinquaud. Its pathophysiology remains unclear, involving the follicular microbiota. It predominates in humans, and more often than black race. It is characterized by patch, single or multiple, whose border is the seat of follicular pustules and crusts. In histology, it is characterized by a neutrophilic infiltrate. Today the diagnosis is facilitated by trichoscopy. An observational study in specialized consultation of the scalp (March 2016 to May 2017), eight patients had scarred alopecic patches of the scalp, with pustules at the periphery. They received a trichoscopic examination by the digital trichoscopy Denolite, and a histological examination. Histological examination, which found an inflammatory infiltrate including neutrophils, and the appearance clinically led to the diagnosis of the follicular folliculitis. the clinical found: eight men, male (M), phototype 4 to 5, mean age 34 years, 62% had a single patch, 38% of the patch multiple, of moderate severity (grade I < 2 cm, II < 5 cm, III > 5 cm) (3), accompanied by pruritus in 87% of cases, and trichodynia in 37%, of chronic evolution. They responded to doxycycline. The trichoscopic signs were: erythema perifollicular and sliding sheath in 100% of cases, hair in tuft in 50% and in broom (trichoptilosis and broken hair) in 30%, and scar in 87% of cases. The contribution of trichoscopy in the diagnosis of decalvans folliculitis is clear, especially with some signs such as: perifollicular erythema, sliding sheath, tufted hair, and scar.

[101]
Yellow dots as a severity tool in alopecia areata. Dermoscopic study of 120 cases

Joice Maria Joseph (India)

Alopecia areata is a chronic, autoimmune, inflammatory disease involving hair follicles that presents as non-scarring hair loss. Dermoscopy helps not only in diagnosis and follow up of hair disorders but also identifying activity and severity of alopecia areata. Dermoscopic examination of areas of hair loss on the scalp of 120 patients with alopecia areata was performed using Dermlite Dermoscope DL3 during a time period of 8 months (February 2016- September 2016). A χ^2 test and logistic regression analysis were used for the statistical analysis. The odds ratios were calculated by cross tabulation. The objectives were: 1) To determine dermoscopic findings of alopecia areata. 2) To correlate dermoscopic findings with severity of alopecia areata. Among the 120 patients enrolled, 68 were males and 52 were females. Mean age of the patients was 26.3. Most common alopecia areata seen in our study was patchy type. Single patch was seen in 58 patients and multiple patches seen in 44 patients. Diffuse type, ophiasis and alopecia universalis seen in 8, 6 and 4 patients each. On dermoscopy exclamation mark hairs (72) was the most common sign observed followed by yellow dots (64), black dots

(58), white dots (48), short vellus hairs (44), broken hairs (40), peripilar sign (24) and v shaped hairs (12). Yellow dots per field of vision was counted to determine the severity of disease and found to be highly sensitive for diagnosis. Exclamation mark hairs and black dots were found to be related to active disease. In conclusion, trichoscopy demonstrate definitive and specific patterns in alopecia areata. Yellow dots field per field of vision can be used as a tool to assess the severity of disease. Trichoscopic studies of alopecia areata are helpful in the non-invasive diagnosis and prediction of the course of the disease.

[102]
Dermatoscopic study of scalp and hair disorders

Joice Maria Joseph (India)

Dermoscopy shows much promise in the diagnosis of various skin disorders. This study was conducted to assess the usefulness of dermatoscopy in the clinical evaluation of different scalp and hair disorders. The aim of the study was to assess the usefulness of dermatoscopy in the clinical evaluation of various scalp and hair disorders and to establish the importance of new technique i.e. dermatoscopy in our dermatology department of Mysore Medical College and Research Institute. A total of 100 patients with scalp and hair disorders who consented were studied for a period of 18 months (December 2015 to May 2017). Trichoscopy was performed with Dermlite DL3 dermoscope and lesions were evaluated for follicular and interfollicular patterns. Out of 100 patients, 51 patients were males and 49 were females. The mean age was 26.4 years. The most common disorder seen was alopecia areata (29%) followed by tinea capitis (14%). The most common dermoscopic findings were broken hairs (35%) and short vellus hairs (34%). Characteristic dermoscopic findings of alopecia areata were tapering hairs, short vellus hairs, yellow dots and black dots. Androgenetic alopecia showed specific findings like hair diameter diversity and empty follicles. Trichotillomania on dermoscopy showed broken hairs of different lengths, black dots, v-shaped hairs and microhemorrhages. Comma hairs, broken hairs and corkscrew hairs were found in tinea capitis. Scalp psoriasis had silvery white scales, red dots and globules whereas seborrheic dermatitis showed yellowish scales and arborizing vessels on trichoscopy. Primary cicatricial alopecias were characterized by dermoscopic findings of lack of follicular ostia. Furthermore, follicular plugging and arborizing vessels were specifically seen in discoid lupus erythematosus. Folliculitis decalvans specifically showed tufted hairs and "star burst sign" on dermoscopy. In conclusion, dermoscopy is a simple, easy to use, relevant diagnostic tool in the evaluation of scalp and hair disorders both for differential diagnosis and prognostic purposes.

[103]

Treatment of androgenetic alopecia with platelet-rich plasma (PRP)

Abderrachid Bouakkaz, Assya Djeridane (Algeria)

Androgenetic alopecia (AAG) is a physiological process characterized by the progressive decrease of length and density of hair on stereotyped areas of the frontoparietal and vertical scalp. Pathophysiology involves an increased sensitivity of the androgen receptors, the latter exert a negative effect on the various pathways of signaling: TGF-β, IGF1, FGF, especially wnt/β-catenin, whose fibroblasts are the purveyors (2). Different treatments are used: anti-androgens, prostaglandin analogues, minoxidil, stemoxydin, growth factors and PRP. Fifteen men presented with AAG grade (2 to 5) from Hamilton, treated with PRP with a frequency of 1 injection for 15 days for 2 months, then the assessment was made at 3 months from the start of treatment, by trichoscopy. PRP was obtained by centrifugation at 3000 rpm for 5 minutes, blood taken from citrated blue tubes, the PRP corresponded to the middle layer above red blood, mixed with calcium chloride (activator) (1 cc of PRP with 5 units of calcium).

A total of 15 men between 24 and 42 years of age, had stage 2 and 5 androgenetic alopecia according to Hamilton scale, chronic evolution of 2 to 5 years. The pull test was positive. There were no co-morbidities, except, an obesity in 4 patients. They all received anterior treatment but without hair regrowth. All patients responded to the PRP with improvement of regrowth, and hair density of 18/cm² (counted manually) in trichoscopic images, and negativity of the pull test in 11 patients. PRP is a simple, inexpensive, interesting procedure in androgenetic alopecia.

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[104]

Ten clinical clues for the diagnosis of frontal fibrosing alopecia

Daniel Melo, Violeta Tortelly, Taynara Barreto, Elaine Albernaz, Natacha Haddad (Brazil)

Frontal fibrosing alopecia (FFA) is a progressive scarring alopecia along the frontotemporal hairline and it was initially associated with postmenopausal women. Although it is considered a variant of lichen planopilaris, the pathogenesis of frontal fibrosing alopecia is not completely elucidated yet. Clinically, FFA affects the frontotemporal hairline, but it can also generate areas of alopecia in the auricular margins and, less frequently, may affect the occipital region. Patients may present loss of eyebrows, involvement of eyelashes, and can present progressive and generalized disappearance of body hair. Most patients are asymptomatic, but pruritus, pain and burning can be observed at affected sites. Due to its insidious course, in some cases the late recognition of the disease and consequent delay in the institution of treatment could interfere in evolution and prognosis of cases. We describe and illustrate ten clinical clues that can facilitate the identification of FFA, aiming that residents having their first contacts with hair diseases can be able to formulate the diagnostic hypothesis of FFA only from their clinical examination. Since there are no established diagnostic criteria for FFA, the purpose of this article is to summarize the disease's most relevant clinical findings contributing to diagnostic suspicion in initial cases and, thus, establishing a proper treatment that can minimize symptoms, disease progression scars and substantial impact on quality of life.

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[105]

Alopecia areata and salmon patch: an actual association?

Daniel Melo, Violeta Tortelly, Taynara Barreto, Elaine Albernaz, Thaisa Dutra (Brazil)

Alopecia areata (AA) is a disease that affects hair follicles, whose etiology is multifactorial with autoimmune and genetic components. Extra-follicular involvement, including nail and ocular changes are related to a worse prognosis, but some authors question whether the salmon patch of the neck would also indicate a worse evolution of the condition. Salmon patch is a benign condition and although rarely associated with other diseases, there are studies suggesting a possible relationship with chronic and extensive forms of AA. In this study, we will demonstrate eight patients with severe areata and salmon patch of the neck and discuss if this association could be real or just an observational bias. It is still fragile the real validity of the clinical association between the salmon patch and AA because of its high prevalence in the general population and also variables such as phototype, density and color of the hair can make it difficult to properly evaluate the salmon patch. As the visualization of this lesion is much more noticeable in the naked occipital region and knowing that the ophiasis form has worse prognosis, it is possible that the association of the two entities can be an observational bias. Therefore, comparative studies with

a greater number of patients are necessary to validate this association, which, if it is really significant, could act as a prognostic marker of great value in the evaluation of patients with AA.

[106]
The expression of G protein-coupled estrogen receptor I (GPER/GPR30) in the pilosebaceous unit

Magdalena Spałkowska, Grzegorz Dyduch, Anna Wojas-Pelc (Poland)

Estrogens exert an important role in skin and hair physiological processes. Estrogens act through four hormonal receptors: estrogen α (ERα), estrogen β (ERβ), more recently identified cell-membrane G protein-coupled receptor 30 (GPER/GRP30) and ER-X (less defined, expressed in the brain). Expression of GPER protein has been shown not only in traditionally estrogen-responsive tissues. The aim of our study was to assess the expression of GPER receptor in pilosebaceous unit. We analyzed 72 healthy skin tissue margin samples from patients of Department of Dermatology, Jagiellonian University Medical College in Cracow, Poland. We correlated the receptor expression with clinical data, such as: sex, age, hormonal status, general history of the patient. GPER was expressed in pilosebacous unit cells of skin samples taken from both male and female patients, the median expression of GPER was 60%. The results of our immunohistochemical study propose that apart from other estrogen receptors, GPER may play the role as estrogen mediator of estrogen action in pilosebaceous unit.

[107]
Surgical treatment of skin tumors of the scalp

Iwona Chlebicka, Jacek Szepietowski (Poland)

The scalp is a unique anatomic region. Surgical treatment of this site is a challenge for dermatosurgeons. Lesions more than 2 cm size usually require reconstruction techniques because of poor elasticity and flexibility of the scalp. On the other hand, aesthetic results of surgical treatment of the scalp are usually very satisfying, because of good blood supply and low risk of incorrect scaring.

A retrospective analysis of patients who were treated because of the scalp tumors in Unit of Plastic Surgery in Department of Dermatology, Venereology and Allergology Wroclaw Medical University between June 2016−December 2017 was performed. Five cases of scalp tumors were chosen to analysis possibilities of treatment. Results and The scalp is an area which is generally neglected by the patients. For this reason, the diameters of skin tumors quite often are impressive. Knowledge of few reconstructive techniques as flaps and grafts is very useful when planning surgical treatment of the scalp. In some cases, secondary intension healing can be treatment of choice.

[108]
Frontal fibrosing alopecia: results from a multicentric case control-study

Oscar M. Moreno-Arrones, David Saceda-Corralo, Rita Rodrigues-Barata, Cristina Pindado, Sergio Vaño-Galvan (Spain)

Frontal fibrosing alopecia (FFA) is a primary scarring alopecia with an increasing incidence and unknown etiology. The aim of this study is to identify hormonal and/or environmental factors associated with the disease. We conducted a multicenter case-control study paired by gender and age (± 5 years) that prospectively recruited 741 subjects throughout Spain. Study subjects completed an exhaustive questionnaire enquiring about diverse factors to which they were exposed at least 5 years prior to the onset of the disease. Study data was described and subjected to bivariate and multivariate analysis. The Benjamini-Hochberg (B-H) procedure was used to control the false discovery rate. Regarding females, history of pregnancy (OR, 1.6 [95% CI, 1.06−2.41]), hormone replacement therapy (HRT) (OR, 1.76 [95% CI, 1.11−2.8]), raloxifene intake, facial sunscreens (OR, 1.6 [95% CI, 1.06−2.41]), exposure to alkylphenolic compounds (OR, 1.48 [95% CI, 1.05−2.08]), rosacea (OR, 1.91 [95% CI, 1.07−3.39]), lichen planus pigmentosus (OR, 9.23 [95% CI, 1.16−73.54]) and hypothyroidism (OR, 1.73 [95% CI, 1.11−2.69]) were statistically associated with the alopecia. In males, facial sunscreen use (OR, 11.6 [95% CI, 1.7−80.9]) and anti-aging creams (OR, 1.84 [95% CI, 1.04−3.23]) were associated with the disease. Intrinsic hormonal factors (e.g. pregnancy) and/or extrinsic (e.g. sunscreens) could be involved in the development of

FFA in predisposed patients through a hypothetic endocrine disruption mechanism. In addition, female FFA patients have a greater prevalence of autoimmune diseases.

[109]
Treatment of alopecia areata, a journey from classic therapeutic options to new drugs and treatments that have appeared in recent years

Alba Gomez-Zubiaur, David Saceda-Corralo (Spain)

Alopecia areata is a therapeutic challenge for the dermatologist, especially in its most extensive forms. Before starting any treatment, it is necessary to take into account some general considerations. It is a disease that does not directly affect the patient's health, except in cases that associate psychological disorders and that may present spontaneous resolution. The extensive forms, those that begin early in childhood and those of long evolution are very resistant to treatments and associate frequent relapses, so it is essential to explain the course of the disease and the possibilities of cure. All treatments have side effects that are different in severity and must be considered. There are no validated treatments, no treatment has been shown to alter the course of the disease, very few have shown efficacy in randomized clinical trials and there are no standardized therapeutic guidelines except the one published in 2012 in the "British Journal of Dermatology". Therefore, it is necessary to develop an individualized treatment plan for each patient, evaluating the psychological repercussion and the clinical characteristics of each case, and carrying out a therapeutic rise that starts with the safest drugs, without going to the higher level until the inefficiency of the current one has been demonstrated during a period of at least 6 months. We review the main pharmacological proposals tested in alopecia areata, with special interest in the most recent and novel, dividing them into local and systemic; and providing data on its mechanism of action, side effects and therapeutic positioning based on the available studies that support it. A therapeutic algorithm proposal is suggested that could be useful as a guide in the management of this pathology.

[110]
The relevance of selenium to alopecias

Violeta Tortelly, Daniel Melo, Andrea Matsunaga (Brazil)

Selenium is an essential oligo-element for the human organism and has been widely studied for the past years due to its antioxidant properties and immunologic actions. This nutrient has been proved effective at combating reactive oxygen species and preventing the production of immunosuppressive cytokines, this way improving one's cellular and humoral immunities. It is already known that both the deficiency and the excess of selenium can cause several side effects, including some types of non-scarring alopecias, such as telogen effluvium. Based on scientific evidence from the literature associating selenium to alopecias, this article aims at discussing when serum selenium levels should be assessed. This might reduce operational costs for the patient and the health care system, by avoiding evaluation in inadequate circumstances as well as unnecessary treatments, based exclusively on laboratory values.

[111]
Evaluating the plasma level of osteopontin in patients with alopecia areata and its relation to disease severity

Niloufar Najarnobari, Behzad Iranmanesh, Minou Najarnobari (Iran)

The aim of this study was to compare the plasma level of osteopontin and severity of alopecia in patients with diagnosis of alopecia areata with healthy controls.

The patients with confirmed diagnosis of alopecia areata visited in the clinic of university hospital were enrolled in this study as cases. Controls were age and gender matched healthy volunteers. The severity and pattern of alopecia were declared by an expertise dermatologist. Blood samples from all enrolled individuals were taken for measuring the level of osteopontin. Overall, 90 individuals, 45 cases with alopecia areata and 45 matched healthy controls were enrolled in this study. The mean age of cases was 29.76 ±6.68 years and the mean age of controls was 29.11 ±7.46 years. 28 (62.2%) cases were male and 22 (47.8%) controls were also male.

25 (55.6%) cases had disease duration more than 2 years and the alopecia pattern was discoid in 27 cases and Totalis in 18 cases. The disease was mild in 9 (20%) cases, moderate in 18 (40%) cases and also severe in 18 (40%) patients. The mean plasma level of osteopontin was significantly more in controls than cases, 56.53 ±27.01 μmol/l and 18.7 ± 22.03 μmol/l, respectively ($p > 0.05$). The severity and duration of diseases has not been related to osteopontin level. The levels of osteopontin has only significant relation with history of stress in all enrolled individuals. There are lower levels of osteopontin in patients with diagnosis of alopecia areata in comparison to healthy controls. The levels of osteopontin are not related with severity of alopecia areata.

[112]
Sunscreens and leave-on facial products in the pathogenesis of frontal fibrosing alopecia – true or false?

Agata Szykut, Marta Sar-Pomian, Małgorzata Olszewska, Lidia Rudnicka (Poland)

Frontal fibrosing alopecia (FFA) is a scarring alopecia mainly involving the frontal and temporal hairline and eyebrows. A large increase of its incidence in recent years suggests that some environmental factors may play a role in the etiopathogenesis of the disease. As frontal fibrosing alopecia occurs predominantly in women, the role of products applied on the facial skin has been recently investigated. The aim of this review was to summarize the literature data on the use of sunscreens and facial cosmetics in patients with frontal fibrosing alopecia and their possible role in the development of the disease. A total of 8 English-language articles were included into the review. Sunscreens were used significantly more commonly in patients with frontal fibrosing alopecia as compared to controls (48% and 24%, $p < 0.001$). This tendency was also reported in men with frontal fibrosing alopecia using sunscreens (35% and 4%, respectively, $p = 0.0012$) and moisturizers containing a sunscreen (71% and 11%, respectively, $p < 0.001$). Patients with frontal fibrosing alopecia were also more commonly using facial foundations as compared to healthy controls (62% and 49%, respectively , $p = 0.07$). Patch testing revealed significantly more common reactions to linalool hydroperoxide and myroxylon pereirae in patients with frontal fibrosing as compared to healthy controls (22.5% and 9.8%, $p = 0.016$; 12.5% and 3.7%, $p = 0.017$, respectively). These data raise a question of cause and effect relationship between the use of sunscreens and facial skincare products and frontal fibrosing alopecia. Further investigations are needed to elucidate this question.

[113]
The effectiveness of mesotherapy in the treatment of scalp psoriasis

Iryna Blaga, Iryna Buianova, Oleksandr Aleksandruk (Ukraine)

The study of psoriatic disease remains one of the most actual issues of modern dermatology. According to World Health Organization the prevalence of psoriasis in developed countries is in the middle of 4.6%. In recent years, the disease increasingly affects young people, at the age of 20–30. The aim of our research was to study the effectiveness of treatment of psoriasis in the hairy part of the head using basic methods and mesotherapy. There were 45 patients under our observation with a diagnosis of plaque psoriasis of the scalp in the stationary stage, at the age of 18 to 34. Prior to the treatment, all patients were interviewed to determine the level of DLQI. According to the 27% of the respondents indicated a very high effect of psoriasis on their life, 32% indicated a significant effect of the disease, and 41% — noted a slight effect of psoriasis. We also determined the PASI score, according to which all patients had a mild severity of psoriasis (PASI 1.5–2.4). Patients were divided into 3 groups: 1st group received basic treatment in the form of sedative drugs, hepatoprotectors, antihistamines and topical steroids; the 2nd group of patients received basic treatment with a course of mesotherapy for the scalp; the 3rd group received basic therapy and a course of phototherapy. Mesotherapy was performed with a combined drug which contains a combination of minerals, nucleic acids, antioxidants and biometric peptides. Injections were performed intradermally around the psoriatic plaques at intervals once a week. Using this technique helps to improve blood circulation in the scalp, moisturizes it and reduces dryness, restores hair and eliminates local signs of inflammation. 83% of patients from the second group noted a decrease in the intensity of itching, scaling and a feeling of discomfort on the scalp after the first week of treatment. From the third group — 71% of patients and 50% of patients from the first group indicated a positive dynamics during the received treatment,

one week after the start. In a month after treatment, in 81% of patients who received only basic therapy — there was a complete regression of rash and the presence of secondary pigmentation on place of the previous elements. The remaining 19% of patients indicated seldom plaques and slight head skin dryness. While 87% of the patients from the third group who received a combination of basic treatment and phototherapy, got rid of rash and indicated absence of subjective manifestations. Another 13% of patients complained of a sense of dryness on the scalp. And in 94% of patients who received in addition to basic therapy the course of mesotherapy, there was a regression of psoriatic plaques, absence of scaling, well moisturized skin of the scalp and improvement of the hair condition. Remaining 6% of patients had lesions on the different stages of regression with slight scaling. At the end of treatment determining of DLQI showed such 88% of patients indicated slight effect of psoriasis on their life and 12% — noted a significant effect of the disease. Average PASI score one month after the start of treatment was 0.7.

The outcome measures show that we achieved treatment goals using combination of basic therapy and mesotherapy for patients with plaque psoriasis of the scalp. A comprehensive approach has helped to reduce the severity of skin symptoms and also the impact of disease on the quality of life.

[114]
Treatment of androgenetic alopecia

Iryna Buianova, Iryna Blaga, Oleksandr Aleksandruk, Vira Kuzenko (Ukraine)

Androgenetic alopecia (AGA), or pattern hair loss, is a common disorder in both men and women. There are several guidelines for the treatment of AGA which are suitable for patients, however each of these has some limitations. The term 'androgenetic alopecia' (AGA) was coined by Orentreich in 1960, but the same condition in men has been termed male pattern alopecia, common baldness, male pattern baldness and male pattern hair loss (MPHL). Androgen dependence and hereditary factors are less obvious in affected women than in men; therefore, PHL, a broader term than AGA, is preferred for women. AGA is the most common type of alopecia that occurs after puberty in both sexes. Patients should avoid hair-care products likely to damage the scalp or hair. Patients should also maintain an adequate diet, especially one with adequate protein. Topical medications work only where the medication is applied; therefore, the entire area at risk of hair loss should be treated with a given topical agent. If possible, any drugs that could negatively affect hair growth should be stopped and alternative substitutes made. Medications for which hair loss is a common potential side-effect include retinoids, cytotoxic agents, anticoagulants, captopril, cholesterol lowering drugs, penicillamine. Any underlying scalp disorder, such as seborrheic dermatitis or scalp psoriasis, should be treated as these conditions can affect the ability to use topical treatments for hair loss without irritation. Generally, with medical treatment, a reduction in hair loss is seen after 3–6 months and visible hair regrowth is observed after 6–12 months. We administered minoxidil solution at a dosage of 1 ml twice daily for topical treatment. The efficacy of minoxidil solution varies in different studies. It is well established that 5% minoxidil is more effective than the 2% or 3% solution. In a study of men aged 18–49 years old, hair counts were 45% higher in those receiving 5% minoxidil than those receiving 2%. Patients should be warned that in the initial 2–8 weeks, a temporary telogen effluvium may occur in some, which is self-limiting and subsides when subsequent anagen regrowth begins, and it should not be a cause for treatment cessation. Topical minoxidil solution was administered for females also in a same dosage, but 2% concentration for 6–12 months.

Although the clinical aspects of AGA are well recognized in both men and women, much remains to be determined regarding the most appropriate treatment based on the genetics and pathophysiology of these common conditions. In addition, dermatologists should take into account the psychological wellbeing of patients with AGA, which can lead to inappropriate treatments.

[115]
Challenging cases in hair restoration

Akhilendra Singh (India)

The loss of hair can have profound effects on one's self esteem and emotional well-being, as one's appearance plays a role in the work place and interpersonal relationships. So not surprisingly hair transplant is most commonly sought cosmetic surgery worldwide and demand is rising day by day. Apart from de novo difficult cases like NW grade VI/VII, various iatrogenic complicated cases, mostly done by quacks or non-experienced hair transplant surgeons are increasing day by day. Scarring alopecia forms

other subset of challenging cases. This presentation aims to demonstrate how previous failure, high grade of baldness with poor donor area, scarring alopecia and scar revision cases should be tackled and produce satisfactory results.

After giving nerve blocks and infiltration of local anesthesia, slits were made in recipient area, the grafts were extracted with the help of motorized sharp punch of 0.75 mm for beard and thigh and 0.80−0.9 mm for scalp and chest. Hair grafts were placed simultaneously in pre-made slits so that out of body exposure time for hair grafts decreases significantly and in turn it increases the viability of grafts and outcome of surgery. Poor surgical technique, improper patient selection, high grade of baldness with poor donor area, scarring alopecias and scars, improper follow up and due care after surgery, minoxidil allergy etc. are common causes of hair transplant failure. Always there is hope and scope of revision with satisfactory outcome in previous failure cases and decent results in high grade baldness and scarring alopecia.

By detailed evaluation of cause of failure, by learning the art of mega/giga-sessions, utilizing beard and body hairs judiciously, decreasing out of body exposure time for grafts and avoiding the pitfalls we can provide better coverage of scalp. "There is always something that can be done for the patient".

[116]
Beard and body hair as important donor source in hair transplant

Akhilendra Singh (India)

Transplanting hair from the body to the balding scalp, typically referred to as Body Hair Transplantation or BHT for short. Advances in hair restoration surgeries provide hope of decent outcome even in previous failure cases where scalp donor area already exhausted. Beard follicles should always be considered as good donor area as most of the time it is possible to extract 1000−1500 robust grafts from beard itself. For patients with advanced baldness (NW V, VI, VII) and in previous failure cases beard and body hairs provide a great hope for pleasing results if used judiciously. Traditionally occipital area of scalp is considered to be the best donor site for graft extraction. Due to previous hair transplant surgery or in advanced cases of baldness (NW VI/VII) hair grafts from occipital scalp only would not be sufficient enough to provide optimum outcome. We have been using beard and body hairs as donor site since last many years with good results. This presentation aims to demonstrate video and share our experience with beard and body hairs as donor site. After giving infiltration of local anesthesia, slits were made in recipient area, the grafts were extracted with the help of motorized sharp punch of 0.75mm for beard and thigh and 0.85−0.9 mm from chest. Hair grafts were placed simultaneously in pre made slits 5 characteristics of donor hairs are evaluated as per Torso Donor Index (TDI) mentioned by Robert True. Patients with TDI score of 0−4 are poor candidates, those with scores of 5−7 are good and 8−10 are ideal candidate for body hair transplant.

The growth and characteristics of beard and body hairs does differ from scalp hairs in texture, hair cycle, maximum length, curls etc. Thus, the proper planning of utilizing scalp hair for front hair line, scalp hairs mixed with beard hairs for mid-frontal and vertex and/or body hairs combined with beard hairs for vertex provide befitting results. Beard and body hairs possess immense supply of donor follicle and in many cases, they can be utilized for high grade of baldness and previous failure cases to provide a great outcome. Hair transplant is most commonly sought cosmetic surgery in world and demand rising every year. In patients who have advanced grade of baldness or previous failure cases by learning the art of mega/giga-sessions with beard and body hairs and avoiding the pitfalls of the same we can provide hope of aesthetically pleasing results even to patients who would be considered unsuitable for hair transplant few years back.

[117]
Advantages of single megasession/ gigasession in advanced grade of baldness NW grade V, VI, VII

Akhilendra Singh (India)

Megasession is a term used in the hair transplant field that generally refers to surgical sessions that exceed 3500 grafts whereas Gigasession refers to 5000 or more grafts For patients with advanced baldness (NW V, VI, VII) the most efficient means of providing coverage is to perform as large a session as possible in the first surgery itself. This presentation aims to demonstrate that megasessions are ideal way to provide coverage for patients with high grade of baldness and it has multiple advantage over multiple smaller sessions. After giving nerve blocks and infiltration of local anesthesia, slits were made in recipi-

ent area, the grafts were extracted with the help of motorized sharp punch of 0.8–0.9 mm for scalp and chest and 0.75 mm for beard. Hair grafts were placed simultaneously in pre-made slits. If done properly megasessions are so efficient that there is much better donor preservation as compared to multiple smaller surgeries Multiple surgeries lead to more fibrosis in donor as well as recipient sites which culminate into difficulty in transplant and poor outcome.

Hair transplant is most commonly sought cosmetic surgery in world and most of the patient have advanced grade of baldness. By learning the art of mega/giga-sessions and avoiding the pitfalls of the same we can save time, energy of treating physician and patient and provide better coverage of scalp.

[118]
Using optical coherence tomography to diagnose various forms of cicatricial alopecia

Maria Zorkina, Zhanna Simankina, Daniil Zorkin (Russia, United Kingdom)

Complexity of identification and of differential diagnosis of pathogenic causes of cicatricial alopecia arises from the similarities that exists between the clinical manifestations of these causes. Situation is further exacerbated by the difficulties associated with performing excisional biopsy and by the lack of distinct morphological features, which would be indicative of a specific pathological process underlying the disease. To evaluate the significance of using optical coherence tomography (OCT) of the scalp in the process of diagnosing various forms of cicatricial alopecia.

A clinical prospective study involving 5 patients with different forms of cicatricial alopecia served as a basis for this paper. Optical coherence tomography of skin layers was carried out for each of the patients by means of using a device named "a computerized optically coherent visualizing topographer made for non-invasive examination of internal structure of human body surface tissues".

OCT provided the possibility to reveal characteristic features of skin atrophy at the early stages of development of pathological processes in all patients included in the trial. The signs that were identified involved: disturbance of standard composition of layers up to the stage of complete disappearance of borders in between layers; thinning of layers; increase in a depth of a penetrating signal. OCT allowed us to successfully identify early signs of development of skin atrophy in patients with various forms of cicatricial alopecia making it a helpful diagnostic tool in dermatological examinations.

[119]
Horizontally sectioned scalp biopsies in the diagnosis of chronic diffuse hair loss

Mithali Jage, Rachita Dhurat (India)

A scalp biopsy is useful to identify women with early FPHL who present with increased scalp hair shedding, but little or no reduction in hair volume. The aim of the study was to evaluate the reliability of a single horizontal sectioned scalp biopsy in diagnosis of FPHL versus triple scalp biopsies. Patients with diffuse hair loss > 6 months duration consenting for scalp biopsy were enrolled. Nineteen women with chronic diffuse hair loss had three 4-mm punch biopsies taken from the midscalp. All 3 biopsy specimens were sectioned horizontally. Findings were compared with 23 patients of diffuse hair loss who underwent single horizontal biopsy. The terminal to vellus hair ratio (T : V) at the mid isthmus was used to diagnose FPHL/AGA (T : V < 4 : 1) & telogen count > 15% (number of telogen hairs divided by the total number of terminal hairs X100) is diagnostic of telogen effluvium. Among the 23 patients with a single horizontal scalp biopsy, 7 were diagnosed as AGA/FPHL (T : V < 4 : 1), 1 have CTE, 6 have indeterminate hair loss (T : V = 5 : 1, 6 : 1, 7 : 1) & in 9 patients biopsy was inconclusive (poor sectioned). Among 57 horizontally biopsy specimens were assessed from 19 patients, 15 were diagnosed to have FPHL, 2 have CTE & 2 having indeterminate hair loss. Among these women, 11 were assessed clinically having stage 1 & 2 hair loss (Sinclair grading), of these 9 were diagnosed to have FPHL & 2 having CTE.

An accurate diagnostic definition was achieved in 17/19 (89.47%) of women with triple biopsies versus 8/23 (34%) with single horizontal biopsy. Patients without increase hair parting could have FPHL or CTE.

[120]

A study of the visual characteristics of transitional zone – a step towards creating natural hairline

Radha Mundhra, Rachita Dhurat, Sandip Agarwal, Sanober Daruwalla (India)

Understanding about a natural hairline is one of the most important elements of a successful hair transplant. Simply using single hair grafts in irregular fashion while creating frontal hairline does not guarantee naturalness. A study of the components of the hairlines would help hair restoration surgeons to better equipped to create a natural hairline which meet high expectation of patients. The aim of the study was to study the visual characteristics of transitional zone which will help in creating a natural hairline. Frontal hairlines of 30 male healthy volunteers aged 24-30 years were studied with regards to transition zone (TZ), defined zone (DZ), frontal tuft (FT), temporal points, lateral lump etc. Close observation of normal TZ was done with the help of a trichoscope. Characteristics of TZ like sentinel hair, micro-irregularities, macro-irregularities were plotted on transparent sheets. These characteristics were studied in shaved scalp too.

Transition zone in all men consisted of multiple rows of single hair of 0.5 to 1 cm of hair line. Small intermittent clusters of hair in ill-defined triangles of various sizes formed micro-irregularity. Gaps were seen between two micro-irregularities. The density of micro-irregularity decreased in fronto-temporal angles. A few isolated (sentinel) hairs were found in front of the TZ. Frontal tuft was not present in all the volunteers. Caliber of a single hair in TZ and DZ were equal in diameter. However, caliber of sentinel hair was thinner. Understanding the principles of hairline design will help the surgeons to create hairlines with high degree of naturalness.

[121]

CD3 T-cell staining – a novel marker for distinguishing alopecia areata from pattern hair loss

Sanober Daruwalla, Rachita Dhurat (India)

Distinguishing diffuse alopecia areata (AA) and pattern hair loss (PHL) may be challenging because both are characterized histopathologically by follicular miniaturization and an increased catagen/telogen shift. Clinicians are often confronted with the differential diagnosis among diffuse AA, PHL, and chronic telogen effluvium (CTE), especially when diffuse hair loss occurs over androgen – dependent areas. On histopathology, without peribulbar lymphocytes, distinguishing between alopecia areata and pattern hair loss is challenging because both possess follicular miniaturization and a catagen/telogen shift. We describe a new tool and aim to see the efficacy of CD3 staining to help overcome this diagnostic challenge. We recruited 10 patients with diffuse hair loss. Detailed history and trichoscopic evaluation was done in each case. A biopsy site was chosen where maximum activity of the disease could be appreciated on trichoscopy. We would like to highlight the care that was taken to cut off excessive tissue before the biopsy sample was sent for processing to the laboratory, to ensure the section taken passed through majority of the hair bulbs. Hematoxylin and eosin stained horizontal sections were evaluated and the findings were noted. The next section obtained was stained with CD3 stain for T cells. A differential diagnosis of alopecia areata and pattern hair loss was considered in all the cases owing to the confusing pattern of diffuse hair loss over the frontal and occipital region. In all cases, a diagnosis of CTE alone was ruled out by the presence of follicular miniaturization. Characteristic trichoscopic findings of alopecia areata were found in 5 patients while trichoscopic findings suggestive of pattern hair loss were found in 8 patients. In all cases, peribulbar lymphocytic infiltrate was inconspicuous on hematoxylin and eosin staining. CD3 positivity in the peribulbar region and empty follicular fibrous tracts (stellae) was obtained in 8 cases thus establishing a diagnosis of alopecia areata. CD3 negativity in the remainder 2 cases, made for a confident diagnosis of pattern hair loss. In conclusion, CD3 immunostaining is a useful tool in distinguishing alopecia areata from pattern hair loss in the absence of an obvious peribulbar hive of bees infiltrate on hematoxylin-eosin sections. The presence of T cells within empty follicular fibrous tracts (stela) and a reticular dermal/subcutaneous, so-called ''bottom-heavy'' distribution strongly supports a diagnosis of alopecia areata, whereas an absence of T cells within the tracts strongly favors pattern hair loss.

[122]

Premature canities: a clinical and investigative study with role of phototherapy in treatment

Shilpi Agarwal, Jill Chitalia (India)

Scalp hair and its colour are at the centre of attention throughout human civilization. Premature canities has major psychosocial and socioeconomic implications as it is a sign of rapidly progressing old age, ill health and body decline. Pathogenesis of premature canities has been poorly understood as yet. Various associations postulated include familial inheritance, nutritional deficiencies, autoimmune disorders and aging syndromes. No effective therapy for canities is available till now. The objective of our study is to do a clinico-epidemiological and investigative study of premature greying of Hair at a tertiary care centre in urban area. Also, we tried to establish a role of phototherapy in its treatment. A total of 100 cases and controls were enrolled as per the inclusion criteria after informed consent. A case record proforma was filled with relevant details. Patients were investigated for parameters such as hemoglobin, serum iron, serum ferritin, total iron binding capacity (TIBC), serum calcium, serum vitamin B_{12}, serum copper, serum zinc, serum vitamin D_3. Statistical evaluation was done of the epidemiological and investigative data. 32 patients out of the total 100 received NB-UVB comb phototherapy thrice weekly for 6 months. Patients were monitored by aid of trichoscopy at start of therapy, after 36 sittings (3 months) and at the end of therapy — 72 sittings (6 months). Family history premature canities was seen in majority of cases. In our study, it was found that majority of cases was having low hemoglobin, serum ferritin & serum vitamin D_3 level. There was significant high number of low ferritin levels among cases compared to controls. None of the patient showed repigmentation following phototherapy. According to our study, genetic predisposition of premature canities has been emphasized. Low levels of serum ferritin may play a role in premature canities in our society. NB-UVB phototherapy had no role in treatment of premature canities as per our study.

[123]

Loose anagen hair: primary syndromic and secondary sporadic – a review and case series of 3 cases

Madhulika Mhatre (India)

Loose anagen syndrome (LAS) is a benign, self-limiting condition where anagen hairs are easily and painlessly extracted. It is mainly reported in childhood; however, it may variably present in adults as well. LAH is a sporadic or autosomal dominant disorder with variable expressivity that primarily affects children but occurrence in adults has also been reported. More common in the white population, its occurrence in the Indian sub-continent has been rarely reported. The presence of anagen hair devoid of its sheath and with a characteristic "floppy sock appearance" is a characteristic feature of loose anagen hair (LAH) on trichogram. Histopathology shows clefting in the hair shaft, inner and sometimes, even outer root sheath. Case 1. A 3-year-old boy born of non-consanguineous marriage presented with sparsely distributed fine hair on scalp since birth which were easily pluckable and failed to grow long. Hair pull test was strongly positive and trichogram revealed > 0% LAH with classic floppy sock appearance. Case 2. A 50-year-old lady who had been treated for Diffuse alopecia areata and who continued to complain of inability of hair to grow long. Hair pull test was positive and trichogram and histopathology was suggestive of LAH. Case 3. A 5-year-old girl with discrete patches of hair loss suggestive of alopecia areata, on performing trichogram revealed to have the floppy sock appearance. The biopsy findings were consistent with LAH. The loose anagen hair (LAH), which is also known as loose anagen syndrome (LAS), is a rare disorder of abnormal anagen hair anchorage. We report that LAH may occur secondarily to autoimmune diseases like Lichen Plano-Pilaris and alopecia areata, with demonstrable autoantibodies against integrins in the basement membrane zone. Our case series, and review on the diagnostic criteria and practical guidelines, aims at enabling the trichologist in managing this benign, self-limiting condition and differentiating it from the other causes of non-scarring alopecias.

[124]
Tricho-rhino-phalangeal syndrome type I associated with Brugada syndrome

Abderrachid Bouakkaz, Toufik Tounsi, Assya Djeridane (Algeria)

Trichorhinophalangeal syndrome (TRPS) is characterized by a small size, thinning hair, a nose bulbous and end-stage lesions, of autosomal dominant inheritance, linked to mutations of the localized TPRS1 gene 8q24.12. Brugada syndrome is a sodium channelopathy, responsible for a heart rhythm disorder that can cause sudden death, autosomal dominant transmission, linked to mutations of the gene SCN5A (chromosome 3). We report a case association of two syndromes.

A 48-year-old woman consulted in dermatology for sparse hair. Native and residing in Algiers the 5th of a sibling of a consanguineous marriage 1st degrees with normal pregnancy and delivery. She had normal hair at birth, but hair loss started when she was 10 years old. At the physical examination, she had a height of 155 cm, a normal mental development without neurological impairment. Alopecia diffuses all over the scalp (the regions: frontal, parietal, occipital, and temporal) was observed, associated with the pear nose, with a brachydactyly of the 4th left finger, and second toe, and a clinodactyly of the 3rd finger, and the 1st toe. Moreover, she is followed for a heart rhythm disorder (Brugada) that required a defibrillator. There were two similar cases in the family: the father, and a sister who died of cardiac arrest. A trichoscopy was performed at the occiput, found yellow dots, with a anisotrichia. The association of a hypotrichosis, a pear nose, and a brachydactyly, without exostosis, nor stunting, all this evoked a trichorhinophalangeal (TRPS) type 1.

Before a trichorhinophalangeal syndrome, think of examining the heart in search of a cardiopathy.

[125]
Excellent response to mesotherapy as adjunctive treatment in male androgenetic alopecia

Daniel Fernandes, Violeta Tortelly, Leonardo Araujo, Glaura Plata (Brazil)

Androgenetic alopecia (AGA) is the most common type of alopecia. Currently, only topical minoxidil, oral finasteride and low-level laser therapy (LLLT) are approved for its treatment. A 47-year-old male presented with diffuse hair thinning. On examination, hair thinning and recession of frontotemporal hairline was noted. Hair pull test and laboratory analyses were negative. A diagnosis of AGA was made. The patient was treated with minoxidil and finasteride for 2 years and showed good response. However, he requested more improvement. After discussion, mesotherapy was added to his previous treatment. Patient received 20 sessions, every 2 weeks, containing minoxidil, finasteride, biotin and d-panthenol. Assessment of the response on the 20th session showed significant improvement in hair density, shedding and thickness. There were no side effects. Mesotherapy involves the use of intradermal injections of a mixture of compounds. Adverse effects described are: infections, atrophy and others. It has also been used successfully as an adjunct to other topical and oral treatments in AGA patients. The authors believe the side effects are more related depending on indications, injection techniques, drugs and doses utilized rather than mesotherapy itself. We reported a case of AGA with excellent response to mesotherapy. Additional clinical trials are needed to standardize the therapy and treatment guidelines.

[126]
Clinical case of nevus sebaceous on the scalp

Halnykina Svitlana, Halyna Holyachenko (Ukraine)

Nevus sebaceous of Jadassohn is a skin neoplasm resulting from abnormal growth of the sebaceous glands. In most cases, the disease has a genetic predisposition and is diagnosed in infants or preschool children. The tumor is localized on the face and the scalp. Nevus sebaceous is inclined to transform into a malignant form so it is necessary to remove it surgically with a preventive purpose. The neoplasm increases in size, significantly protrudes above the level of the surrounding skin. After puberty, neoplastic changes are possible, which are manifested in the form of nodules or ulcers: the most commonly occurring neoplasms are trichoblastoma, trichollemoma and papillary syringocystadenoma. Correct diagnosis can be established by histological examination. A 15 years old patient presented with complaints about the presence of a neoplasm on the scalp of the right parietal area with hair absence and serous bloody discharge. Case history of the disease: the given neoplasm was present from the birth and

grew proportionally. Five years ago, the patient presented to a dermatologist with a complaint about the presence of enlargement, the doctor prescribed an antiviral ointment, which the patient rubbed onto the affected area for several months and noticed bloody discharge. The structure of the sebaceous gland with characteristic lobes and their vessels is clearly visualized at dermatoscopy. The patient is referred to the National Cancer Institute for the surgical removal of the tumor, which was histologically diagnosed as tubular-capillary syringoadenoma with focal inflammatory infiltration.

[127]
Hair regrowth in female patient with alopecia universalis after psoralen and ultraviolet A therapy combined with injections of procaine benzylpenicillin

Katarzyna Tomaszewska, Aleksandra Kobusiewicz, Anna Zalewska-Janowska, Andrzej Kaszuba (Poland)

Alopecia areata (AA) is an autoimmune disease that presents as nonscarring hair loss, although the exact pathogenesis of the disease remains to be clarified. AA can affect any hair-bearing area. It often presents as well demarcated patches of nonscarring alopecia on the skin of overtly normal appearance. Based on the extent of hair loss, the disease is clinically classified as follows: patchy AA, in which there is a partial loss of scalp hair; alopecia totalis (AT), in which 100% of scalp hair is lost; or alopecia universalis (AU), in which there is a 100% loss of all scalp and body hair.

A 37-year-old woman presented with a 3-year history of AA, after an initial episode with resolution at age 26 years. She had a relapsing-remitting course that was initially well controlled with topical treatment. Her condition abruptly worsened to AU in 2016. Based on the long-lasting experience of our Department, procaine chelating properties and its beneficial effects on the microcirculation, the patient started injectable procaine benzylpenicillin with psoralen and ultraviolet A (PUVA) therapy with a good outcome.

No drug is currently approved by the Food and Drug Administration (FDA) for the treatment of alopecia areata. At the present time, many therapies are available and treatment choices are frequently based on disease extent, duration, activity, and age of the patient. In the described case, the course of injectable procaine benzylpenicillin with PUVA therapy was found successful.

[128]
Frontal fibrosing alopecia as a clinical sign of subacute cutaneous lupus erythematosus

Karolina Englert, Anna Wojas-Pelc (Poland)

Alopecia is one of the signs of lupus erythematosus. Hair loss can occur in the course of subacute cutaneous lupus erythematosus; discoid lupus erythematosus and systemic lupus erythematosus on every stage of disease. The aim of this report is to present an interesting case of frontal fibrosing alopecia (FFA) coexisting with lupus erythematosus in the patient remained under care of Jagiellonian University Dermatology Department. A 66-year-old female presented with a few year history of progressive hairline recession over fronto-temporo-parietal area (up to 4 cm). On examination: shiny affected area, incomplete hair loss and loss of follicular openings were noted. Nearly total absence of eyebrow hairs was observed, but all other parts of body hair appeared normal. Trichoscopic observations comprising: absence of follicular openings, minor perifollicular scaling, cicatricial white patches and perifollicular erythema confirmed the diagnosis of FFA. When eliciting a history the patient admitted photosensitivity, which was confirmed by the positive phototest reaction to UV-B radiation (0, 106 J/cm^2) and their skin phototype was assessed as I FST (Fitzpatrick skin phototype). Laboratory tests revealed slightly decreased levels of total protein and positive ANA test (1 : 640) with positive anti-SSA autoantibodies. Other tests including routine biochemistry tests and levels of complement components showed no abnormalities. Despite a lack of immune deposits at the dermo epidermal junction histological findings were suggestive for lupus erythematosus and included i.e. perivascular lymphocytic infiltrates. Treatment with systemic glucocorticosteroids, hydroxychloroquine and mycophenolate mofetil was instituted and hampered the progression of disease. Frontal fibrosing alopecia is one of the types of scarring alopecias with unknown etiology. There are only a few descriptions of FFA and LE associated with DLE and SLE. However, these two entities may have a common background, and as previously noted in the literature by other authors, their coexistence may not be a coincidence. On the basis of these findings the linkage between FFA and LE should be further investigated.

[129]

Demodicosis of the scalp – an incidental finding or a clinically important infestation?

Joanna Dawicka, Piotr Szlązak, Martyna Sławińska, Roman J. Nowicki (Poland)

Demodex folliculorum and Demodex brevis are mites commonly detected in pilosebaceous units in humans. Typically they can be found in the skin of nasolabial folds, nose, cheeks, forehead and eyelids, but unusual localizations such as the scalp have also been reported. Publications on Demodex folliculitis of the scalp are very few and a pathogenetic role of these mites in hairy skin diseases remains controversial. We present a case of a 64-year-old woman who came to the ambulatory because of the extensive hair loss and occasional allodynia of the scalp. The physical examination revealed a hair loss following a typical woman pattern of androgenetic alopecia and a diffuse erythema of the scalp. The trichoscopy showed signs of androgenetic alopecia (such as hair shaft thickness heterogenicity, vellus hairs and single hair follicular units) as well as perifollicular scaling and erythema. Due to cicatricial alopecia suspicion, scalp biopsies were taken. The histopathologic examination revealed the presence of Demodex folliculorum in hair follicles, slightly increased keratinization of hair follicles infundibula and perivascular, inflammatory infiltration composed mainly of T lymphocytes. In conclusion, further studies on Demodex role in scalp diseases are necessary. Trichoscopy may be a useful, subsidiary diagnostic tool in the diagnosis of scalp demodicosis.

[130]

Juvenile systemic lupus erythematosus presenting as alopecia areata

Jill Chitalia, Rachita Dhurat (India)

Juvenile systemic lupus erythematosus is an autoimmune disorder with multisystem involvement. The most common mucocutaneous lesions in JSLE are: malar rash, photosensitivity, cutaneous vasculitis and oral ulcers. We report here a case of juvenile SLE presenting as alopecia areata which is a rare initial manifestation.

11-year-old female child presented to us with patchy hair loss since 3 months. On examination multiple smooth patches of alopecia were present on scalp. We kept a provisional diagnosis of alopecia areata and patient was under treatment. Meanwhile after 3 months patient complained of oral ulcers and red raised lesions on face and bilateral upper limb associated with photosensitivity. She also c/o proximal muscle weakness. On examination, erythematous plaques were present on bilateral malar area, bridge of nose, forehead, retroauricular area along with erosions on buccal mucosa and hard palate. Histopathology showed dermal edema, interstitial mucin, perivascular lymphocytic infiltrate. Her ESR was raised and platelets were 65 000. ANA, anti-dsDnA, anti-U1RNP was positive. Serum LDH was raised but CPK-MB was normal. We kept final diagnosis as juvenile SLE with overlap syndrome presenting as alopecia areata. Patient was started on oral prednisolone 1 mg/kg/day and tapered gradually over 6 weeks along with mycophenolate mofetil 500 mg BD. Interestingly patient had complete hair regrowth in 6 months.

Our case was unusual as presentation started with alopecia and we would also like to emphasize on mycophenolate mofetil showing good clinical response. Any child with mucocutaneous lesions associated with SLE needs to be regularly reassessed and monitored for systemic involvement.

[131]

Familial wooly hair syndrome: a rare case report

Jill Chitalia, Rachita Dhurat (India)

Woolly hair is a rare congenital abnormality of hair shaft characterized by tightly coiled hair involving part or the entire scalp occurring in an individual of non-negroid origin. Localized variant (woolly hair nevus) and two generalized variants, including autosomal dominant and autosomal recessive (AR) familial woolly hair are described. We hereby report a family with AR familial woolly hair. A 9-year-old female child, born of 2nd degree consanguineous marriage came with c/c of thin sparse hair and inability of hair to grow in length since early childhood. No h/o any skin lesions, breathlessness, palpitations. Similar h/o was present in two elder brothers. On examination, thin, sparse, unruly, light colored, brittle wooly hair were present. Hair pull test was positive with hair breaking through shaft. Similar presentation was seen in brother with normal density of hair. Eyebrow, eyelashes, body hair, palms and soles, nails were normal in both. Trichoscopy showed follicular

prominence and thin rough hair. Trichogram showed normal anagen: telogen ratio, dystrophic hair with absent sheath and crawling snake hair appearance of shaft. Her Hb was low, thyroid function tests and 2d echo was normal. Hence final diagnosis of familial wooly hair syndrome was made. Very few cases of AR familial woolly hair have been described in individuals of non-negroid origin. We therefore report a family of this rare entity. Treatment for woolly hair is not currently available, although in some patients the hair may become darker and less curly with time.

[132]
Lipoedematous scalp with alopecia areata – a rare presentation

Sanober Daruwalla, Rachita Dhurat (India)

Lipedematous scalp was first described by Cornbleet in 1935. It is a rare disease, mainly reported in black women, and is characterized by diffuse or circumscribed thickening of the scalp, more palpable than visible. Lipedematous scalp comes under the subset of lipedematous alopecia. Cases of lipedematous scalp associated with androgenetic alopecia, alopecia areata, mucinosis and scalp psoriasis have been sporadically reported in literature. We present a case of Lipoedematous scalp with alopecia areata. A 52-year-old married female came with the chief complaints of hair loss since 5−6 years. She was treated with topical fluocinolone and systemic steroids with resolution. However, there was recurrence after one year. On examination, diffuse hair thinning more prominent over frontal, vertex and parietal region of the scalp was noted. Her hair pull test was negative. There was no evidence of scalp inflammation, scaling or increased hair fragility. On palpation, boggy, spongy consistency all over the scalp was noted. Trichoscopy revealed no exclamation mark hair and hair diameter diversity < 10%. A provisional diagnosis of diffuse alopecia areata and female pattern hair loss was kept. Histopathology revealed swarm of bees appearance and melanin incontinence, confirming the diagnosis of alopecia areata. However the bogginess couldn't be explained. After thorough literature search and repeat review of histopathology, increased thickness of subcutaneous fat with the connective tissue septa separating subcutaneous tissue into fat lobules were lacking and continuous diffuse sheet of mature adipocytes was seen which is consistent with the finding of Lipoedematous scalp. She has been started on DPCP (Diphenylcyclopropenone) and hair regrowth after 8 sessions itself is appreciable.

Lipedematous scalp is a possible cause of dysesthetic syndrome of the scalp. Till date no case of lipoedematous scalp with concurrent presence of alopecia areata has been reported. In patients with no obvious cause for dysesthesia of the scalp, it is advisable that the scalp be palpated to identify this rare presentation that may otherwise be missed.

[133]
Needling in trichostasis spinulosa. A newer painless approach

Mithali Jage, Jill Chitalia, Rachita Dhurat, Angela Nagpal (India)

Trichostasis spinulosa is a common but unrecognized disorder of pilosebaceous unit in which clusters of vellus hairs become embedded within hair follicles, with resultant dark, spiny papules on the face or trunk. It is a midfacial disease that occurs in younger age in female patients with Fitzpatrick skin type III or higher. A 30-year-old female, presented to dermatology OPD with multiple follicular comedone like black papules on convexity of nose. On trichoscopy, multiple follicular ostia with tuft of hair protruding from it. Based on clinical examination and trichoscopy, a diagnosis of trichostasis spinulosa was made. Depilation, keratolytics, and topical and systemic retinoids were given to the patients. However, patient did not show a satisfactory response. A novel technique of needling was performed. The affected area was kept wet by a saline gauze for 15 minutes to soften the hair. Next, sharp tip of 26-gauge needle was inserted in the direction of hair in the hair follicle and was manipulated in such a manner to remove the hair without causing abrasion to surrounding skin. No topical anesthesia was required. The entire affected area was treated in a single sitting. Needling technique is a single sitting, painless office, procedure for treatment of trichostasis spinulosa.

[134]

Perifolliculitis capitis abscedens et suffodiens. What should be satisfactory effects of treatment?

Patrycja Wiślińska, Ewa Ring, Irena Walecka (Poland)

Perifolliculitis is a therapeutically challenging suppurative and inflammatory scalp disease of unknown etiology. It is one of the causes of cicatricial alopecia mostly observed in adult males. Clinically it has to be differentiated from other causes of folliculitis affecting the scalp. The treatment is usually difficult and often disappointing. We report a case of a 25-year-old male who presented with a tender fluctuant nodules and painful abscesses with draining pus and patchy scaring alopecia on his scalp for three years. Additionally hidradenitis suppurativa was observed under his armpits. When admitted to our department isotretinoin treatment was started at daily dose of 20 mg. After two weeks 40 mg *p.d.* with good response. Initially CK level and strong pain of muscles and joints developed causing discontinuation of treatment. Then rifampicin with clindamycin was admitted for three months with good tolerance and some visible reduction of draining abscesses. When treatment was finished acitretin treatment was started at 25 mg *p.d.*, with good and rapid response, with no adverse effects. Additionally during the whole treatment local treatment with tretinoin and gentamicin was performed. The treatment of PCAS represents difficulties for both patient and physician. A rapid, positive response to treatment was observed after isotretinoin and acitretin, better then after clindamycin and rifampicin. In our opinion vitamin A derivatives are most effective in treatment though for some of the patients effects are not satisfactory since scaring alopecia patches above fibrotic tumors stayed residually present.

[135]

Folliculitis spinulosa decalvans: case report and response to acitretin and isotretinoin

Mayara Barros, Danielle Quintella, Tullia Cuzzi, Rodrigo Pirmez (Brazil)

Folliculitis spinulosa decalvans is a scarring alopecia of the scalp accompanied by keratosis pilaris of the trunk and extremities. The treatment is challenging with few cases reported in the literature. A 20-year-old man presented with erythema, papules, pustules and diffuse scaling on the scalp since childhood. The condition had worsened in the past 5 years. Scalp examination revealed scarring alopecia with polytrichia formation. Diffuse follicular keratosis and a facial reddish-brown discoloration were also present. Previous treatments included topical/oral antibiotic therapy and topical steroid which lead to partial improvement, but with frequent relapses after discontinuation. Oral isotretinoin 0.5 mg/kg/day was then introduced. After 3 months of use and no improvement, it was switched to acitretin 20 mg/day for 6 months. During this period, a great reduction in the number of inflammatory relapses and need of oral antibiotics was observed. Folliculitis spinulosa decalvans is usually recurrent and there is no consistently effective treatment. The rarity of the condition is an obstacle to the performance of large studies. In this case report, the use of acitretin seems to have reduced the need of recurrent antibiotic cycles and might be an alternative in patients exposed to prolonged antibiotic therapy.

[136]

Secondary cicatricial alopecia treated by laser-assisted microfollicular unit transplantation (LAMFUT)

Ahmed A. Youssef (Spain)

Secondary cicatricial alopecia (SCA) cases are known for being difficult to treat. It has been estimated that the percentage of acceptance of transplanted hairs is reduced in scarred tissue by less than 50% (compared with > 90% growth rate in normal non Cicatricial tissue) (Epstein *et al.*, 2003). This is due to limited vascular supply in areas of cicatricial alopecia, which affects graft viability. In addition to graft failure, sclerotic tissue also increases the risks of infection, ischemia, hypoxia, and necrosis due to the inadequate vasculature (Rose *et al.*, 2004). Fractional carbon dioxide laser resurfacing (FxCR) has a remarkable effect on scar remodeling and revitalization of tissue. We hypothesized that our laser-assisted follicular unit transplantation (LAMFUT) technique would increase the number of viable grafts in cases of SCA. Twenty seven patients diagnosed with SCA after previous surgeries and/or trauma were treated by FxCR using variable parameters to allow deep fractional ablation for 2−3 sessions; 1−2 session within one month before the date of surgery for induction of revascularization and last session on the

same day of surgery immediately before the implantation step to determine the density plan and prepare holes for follicular units' insertion in the recipient area. Trichoscopy evaluation for hair density was done immediately after implantation, 10 days after surgery and 9 months after surgery. Three biopsies were taken; one from control scarring tissue without any treatment, second was taken after PRP (platelet rich plasma) injection only for a scarring tissue, and third was taken twenty minutes after laser and PRP treatment and immediately before implantation. The biopsies were stained by H&E and Picrosirius Red Stain; further quantitative evaluation was made using circularly polarizing microscopy and IMAGEJ program for detection of color changes to evaluate collagen regeneration. Digital photographic evaluation was made for comparison of pictures before and after 9 months. Using LAMFUT, we were able to have implanted hair follicles with approximately 1−2 mm hole to hole density ranging from 55 to 85 holes per cm^2, compared to a pattern density spacing of 5-mm hole to hole distance done in a previous study be Kwon *et al.*, 2007. After 9 months, hair regrowth was more than 90% of implanted grafts using Trichoscope for re-evaluation. All the signs of revitalization including elasticity, color and texture were improved according to the assessors' evaluation. Compared to previous studies, our results showed both higher density of hair implantation in SCA recipient areas and higher graft regrowth on using deep ablative laser programmed technique. There was minimal popping up of implanted hair follicles and the intraoperative bleeding was almost null; thus, higher density in such cases was possible. LAMFUT is a new promising technique for optimizing results of Hair Transplantation in cases of SCA. Further studies should be done for providing histopathological evidence of improvement in laser treated areas compared to untreated areas after hair transplantation, using Immunolabelling for related growth factors.

[137]
Scalp involvement in pemphigus – clinical and immunological implications

Marta Sar-Pomian, Lidia Rudnicka, Małgorzata Olszewska (Poland)

Scalp involvement is observed in up to 60% of patients with pemphigus. Aim: Evaluation of clinical and immunological significance of scalp involvement in pemphigus vulgaris and pemphigus foliaceus. A total of 75 patients (46 with pemphigus vulgaris, 29 with pemphigus foliaceus) were included into the study. Pemphigus Disease Area Index, anti-desmoglein antibodies concentration in enzyme-linked immunoassay, pemphigus autoantibodies titer in indirect immunofluorescence, time to achieve complete clinical remission and serological remission as well as their duration were analyzed. Scalp involvement was observed in 30/46 (65.2%) patients with pemphigus vulgaris and 28/29 (96.6%) patients with pemphigus foliaceus. Positive correlation between scalp involvement and general pemphigus severity expressed by the Pemphigus Disease Area Index ($r = 0.7$, $p < 0.05$) was observed. The time required to achieve a complete clinical remission in patients with and without scalp involvement was 39.1 ±47.1 and 9.1 ±7.8 months, respectively ($p = 0.02$). The duration of complete clinical remission was 14.1 ±17.4 and 105.7 ±108.8 months, respectively ($p = 0.03$). The respective time required to achieve serological remission was 37.7 ±58.5 and 15.5 ±18.8 months ($p = 0.01$), whereas the duration of serological remission was 9.2 ±18.8 and 39.1 ±60.1 months, respectively ($p = 0.03$). The average concentration of anti-desmoglein 1 autoantibodies equaled 109.9 ±68.0 U/ml and 21.3 ±39.4 U/ml respectively in patients with and without scalp involvement ($p = 0.003$). Scalp involvement is a marker of a severe course of pemphigus. It may indicate the need for more intensive immunosuppressive treatment.

[138]
The life of hair in lichen planopilaris depends on the severity and duration of the disease

Joanna Czuwara, Adriana Rakowska, Olga Warszawik-Hendzel, Leszek Blicharz, Lidia Rudnicka (Poland)

Lichen planopilaris (LPP) is a lymphocytic driven destruction of the hair epithelium in its upper part leading to permanent hair loss and scar formation with fulminant or insidious course. Trichoscopy features of active LPP are characteristic, but subtle long-standing cases require confirmation by histopathology. Differential diagnosis is broad and includes scarring and nonscarring alopecias, or miscellaneous conditions as monoclonal gammopathy, folliculotropic lymphoma or cicatricial pemphigoid. In our center the scalp biopsy is performed in suspected, not evident in trichoscopy cases of lichen planopilaris. In the past 3 years (2015−2017) 41% biopsies proofed

the active disease, 22% showed changes suggestive of LPP, 19% revealed end-stage cicatricial alopecia called pseudopelade, and 18% showed features of other diseases (androgenetic alopecia, folliculitis decalvans, morphea, alopecia areata, DLE, or hair shafts abnormalities). 20% of lichen planopilaris showed coexisting features with androgenetic alopecia. The active stage of the disease show dense lymphocytic lichenoid infiltrate at the upper level of the terminal hair epithelium, vacuolar degeneration, cytoid bodies, dyskeratotic and necrotic epithelial cells, hyperkeratosis and hypergranulosis of the involved infundibula. In some cases, rapidly destroyed epithelium releases naked hair shaft which may induce granuloma formation. In less severe stages of LPP, upper eccentric epithelial thinning, hair shaft contraction, loss of sebaceous glands, concentric lamellar perifollicular fibroplasia or fibrosis occurs pushing back lymphocytic infiltrate. In advanced LPP, hairs are replaced by fibrous tracts. Based on scalp biopsy at different stages of lichen planopilaris, the life of hair follicles can be seen and help to make a therapeutic decision.

[139]
Histopathological features of scalp pemphigus

Marta Sar-Pomian, Joanna Czuwara, Lidia Rudnicka, Małgorzata Olszewska (Poland)

Intraepidermal acantholysis is a characteristic histopathological feature of pemphigus. Scalp is commonly involved in pemphigus, nevertheless the literature data on histopathological picture of scalp pemphigus are sparse.

The aim of the study was to evaluate of the histopathological features of scalp lesions in the course of pemphigus vulgaris and pemphigus foliaceus.

A total of 32 patients with scalp involvement (17 with pemphigus vulgaris and 15 with pemphigus foliaceus) were enrolled into the study. Each patient underwent one 4-mm punch biopsy of the erosive scalp lesions for histopathological examination. The tissue specimens were stained with hematoxylin and eosin and evaluated under a light microscope.

Acantholysis in terminal hair follicles was visible in 15/17 (88.2%) and 12/15 (80%) pemphigus vulgaris and pemphigus foliaceus specimens, respectively. Acantholysis extended down the entire length of the outer root sheath of the hair follicle in 12/17 (70.6%) patients with pemphigus vulgaris. Follicular acantholysis in pemphigus foliaceus was restricted to the infundibulum and occurred in 12/15 (80.0%) patients. Acantholysis in the vellus hair follicles was observed in 12/17 (70.6%) and 9/15 (60.0%) cases, respectively. The miniaturization of sebaceous glands was seen in 14/17 (82.4%) and 12/15 (80.0%) patients, respectively. Follicular acantholysis is a common histopathological feature of pemphigus, occurring both in terminal and vellus hair follicles. Pemphigus vulgaris and foliaceus differ in the depth of follicular acantholysis. The miniaturization of sebaceous glands is a common histopathological feature observed in scalp specimens of patients with pemphigus.

[140]
Congenital atrichia with papular lesions: diagnostic wandering

Abderrachid Bouakkaz, Attika Chibane, Toufik Tounsi, Assya Djeridane (Algeria)

Papular atrichia is an isolated disease of hair and fur. Individuals who have it have an almost complete disappearance of the hair, and fur. It is a rare congenital ectodermal dysplasia transmitting according to the autosomal recessive mode. we present an observation wrongly diagnosed with alopecia areata. A 2-year-old girl, from Setif, from a non-consanguineous marriage with pregnancy and childbirth normal. The 2nd of a sibship of two sisters. She was consulting October 2016 for total alopecia of the scalp evolving since the age of 2 months. There are no similar cases in the family. She was treated as a scabies with topical corticosteroid, infiltration, but to no avail. On examination, there was universal alopecia with scattered hair of the median region (vertex), and small papules. There were no abnormalities of the nails, teeth, or sweating. The trichoscopic examination found a rarefaction of the follicular orifices, without black spots, nor hair in exclamation points. Found hypoplastic follicles, some are filled with keratin. Without inflammatory infiltrates. A blood test including: FNS, calcemia, vit. D, and thyroid balance, had returned without abnormalities. The lack of response to treatment, trichoscopic and histological signs in favor of the alopecia areata. and the presence of keratin in the follicles in histology. All this allowed to retain the diagnosis of recessive papular recessive atrophy by the attack of only one member of the family. Papular congenital atrichia is a rare clinical, histologically and genetically defined rare syndrome. that many cases misdiagnosed "congenital universal alopecia areata".

[141]
Alopecia revealing pure ectodermal dysplasia

Abderrachid Bouakkaz, Assya Djeridane (Algeria)

Ectodermal dysplasias form a complex group of clinically and genetically distinct diseases, characterized by developmental disorders affecting tissues of ectodermal origin, involving hair, nails, teeth and sweat glands. Pure ectodermal dysplasia of the nails and hair is a rare genetic disorder characterized by: hypotrichosis or complete alopecia, dystrophic nails. while the other ectodermal structures are intact. A child aged 2 years, born at term, without any particular antecedents, only son, resulting from a consanguine marriage of the first degree. Consult for a congenital alopecia universalis. the dermatological examination found a total absence of hair on the scalp, eyebrows and eyelashes and the rest of the body. The scalp was normal (not inflammatory, or atrophic), associated with onychodystrophy of twenty nails. the sweat glands were not affected, sweating correctly, no notion of intolerance to heat, nor skin xerosis. A correct dental eruption. normal salivary and lacrimal secretion. Age-appropriate growth consistent with age. The general examination was normal. The trichoscopic examination showed complete absence of hair, and yellow dots reduced. Histology of the scalp showed rare, atrophic hair follicles. The diagnosis of pure ectodermal dysplasia was retained, because: congenital anomalies of two ectodermal structures: hair + nails, absence of other ectodermal structures anomaly: teeth + sweat glands, and absence of systemic anomalies. Pure ectodermal dysplasia is a rare disease. whose diagnosis is clinical, trichoscopic and histopathological. The genetic study would be of great help in determining the mutation and the corresponding molecular anomaly.

[142]
Efficacy of isotretinoin and acitretin in treatment of frontal fibrosing alopecia

Adriana Rakowska, Agnieszka Gradzińska, Małgorzata Olszewska, Lidia Rudnicka (Poland)

A range of both topical and systemic treatments for frontal fibrosing alopecia have been disappointing. The objective of the study was to assess the efficacy of retinoids in treatment of frontal fibrosing alopecia. A retrospective analysis included 54 female patients with frontal fibrosing alopecia, treated with isotretinoin at the daily dose of 20 mg (29/54) or acitretin at the daily dose of 20 mg (11/54). Control group was based on 14 patients (14/54) treated with oral finasteride 5 mg/daily. The study was conducted between 2007 and 2017. The basic of the study is the measurement of distance between the frontal hairline and the glabellar crease prior to the commencement of treatment and after 6, 12 and 24 months. The treatment with systemic retinoids lasted between 12 and 16 months (the mean duration of treatment was 13.5 months). The primary treatment goal was defined as no further progression of disease after 12 months of treatment, while the secondary treatment goal was defined as no further progression of disease following the discontinuation of systemic retinoids. The primary treatment goal was achieved by 76% (23/29) of patients treated with isotretinoin, 73% (8/11) of patients treated with acitretin and 43% (6/14) of patients treated with finasteride. The secondary treatment goal was achieved by 72% (21/29) of patients treated with isotretinoin, 73% (8/11) of patients treated with acitretin and 43% (6/14) of patients treated with finasteride.

The administration of systemic retinoids may be beneficial for the stabilization of frontal hairline in patients with frontal fibrosing alopecia.

[143]
Microneedling in male androgenetic alopecia recalcitrant to conventional therapy – a less frequent portal for follicular neogenesis?

Aseem Sharma, Rachita Dhurat, Matapathy Sukesh (India)

Androgenetic alopecia (AGA) is a complex interplay between androgens, genetics, inflammation, disrupted signalling and a resultant crosstalk shutdown. The existing conventional therapies viz., finasteride and minoxidil, fail to target all these pathogenetic factors in AGA, and showcase efficacies ranging between 30% and 60%, as per Cochrane reviews. Thus, a large number of patients ending up unsatisfied, demanding better cosmetic coverage over the scalp. Microneedling causes overexpression of hair growth-related genes, vascular endothelial growth factor, B catenin, Wnt pathways via platelet activation and wound regeneration, thereby causing induction of new follicular units, as demonstrated

by our study in 2013. Twenty men with AGA, were on finasteride and 5% minoxidil solution since 2 to 5 years, and showed no new hair growth. They were subjected to weekly scalp microneedling with a 1.5 mm depth Dermaroller, 15 sessions, over a period of 24 weeks along with existing therapy. Patients were assessed by standardized, stereotactic color global photographs of the affected area by 7-point evaluation scale and patients' subjective hair growth assessment scale. The patients were followed up for 18 months post procedure to assess sustainability of the response. 14 patients showed a response of +2 to +3, 4 showed +1, and 1 patient showed 0 on standardized 7-point evaluation scale. New hair growth started after 8−10 sessions. The patients' satisfaction was more than 75% in 16 patients and more 50% in three patients, on patients' subjective hair growth assessment scale. One patient reported a status quo on questionnaire. The obtained results were sustained post procedure during 18 months follow-up period. Microneedling showed an accelerated response leading to significant scalp density. This is the first case series to report the "boost" effect provided by microneedling with respect to new hair follicle stimulation in patients with androgenetic alopecia who were poor responders to conventional therapy.

[144]
Trichoscopic findings in frontal fibrosing alopecia

Sofia Papanikou, Iris Zalaudek, Vasiliki Chasapi (Greece, Italy)

Frontal fibrosing alopecia (FFA) is a primary lymphocytic cicatricial alopecia, described by Kossard. Trichoscopy is a valuable non-invasive method to differentiate clinically hair diseases. The purpose of the present study was to research and document the trichoscopic findings of 30 patients with a FFA attending the Laboratory of Physiology and Diseases of the Hair at the Andreas Syggros Hospital in Athens, Greece. The studying process included a questionnaire for collecting demographic data and information on the patient's medical record. The diagnosis was based on the typical clinical findings of the disease. The examination was carried out using a polarized and a non-polarized dermatoscope. A statistical analysis of the findings was conducted and the study's final conclusions were drawn. Among the patients, there were 29 (96.5%) women and 1 (3.5%) man. The ages ranged between 42−85 years. The average age was 62.3 years. In 12 (40%) patients the disease seemed to be active and 18 (60%) did not have activity signs. 22 (73.33%) patients had perifollicular erythema. 18 (60%) patients had perifollicular hyperkeratosis, compared to 12 (40%) who had not developed. 12 (40%) of the patients had follicular red dots and 18 (60%) of the patients didn't have. All patients (100%) showed lack of follicular openings. 19 (63.33%) patients suffered from eyebrow alopecia and only 1 (3.33%) suffered from eyelash alopecia. 2 (6.67%) patients had a history of autoimmune diseases and 28 (93.33%) didn't. Additionally, 3 (10%) patients suffered from thyroid diseases and 6 (20%) patients had a history of LPP. In conclusion, trichoscopy is reliable and helpful tool for the diagnosis of FFA.

[145]
Frontal fibrosing alopecia: a disease that affects men as well

Sofia Papanikou, Vasiliki Chasapi (Greece)

Frontal fibrosing alopecia (FFA) is an acquired primary lymphocytic cicatricial alopecia, described by Kossard. In recent years there has been an increase in the incidence of the disease in women worldwide. There are also reports of sporadic cases in men. The etiopathogenesis of FFA is not fully understood. It is characterized by a progressive symmetric recession of the frontotemporal hairline, loss of the eyebrows, as well as eyelash loss and body hair. The treatment of FFA has been disappointing, due to the unpredictable nature of the disease. The diagnosis is based on a distinctive clinical picture, trichoscopy and, in case of doubt, histological examination. The disease is unpredictable in its course. Because it causes irreversible alopecia the therapeutic concern is to prevent its development. The purpose of the present study was to research and document 10 cases of men diagnosed with FFA, the last five years, at Andreas Syggros Hospital, Athens, Greece. The diagnosis was based on the typical clinical findings of the disease. A questionnaire was used to record both individual and family history data, and photos were taken from the areas surveyed. The findings were evaluated, and the results recorded and statistically studied. The epidemiological and clinical characteristics, treatment and response are described and compared with those of women. The results of this study seem to be consistent with previous similar studies. Men with frontal fibrosing alopecia show the disease at a younger age than women and there appear to be differences in the clinical picture between male and female patients.

[146]

Efficacy and safety of a water-based, peelable nail polish versus a 5% amorolfine nail lacquer for topical treatment of mild to moderate onychomycosis

Franck Eertmans, Nejib Doss, Bart Rossel, Els Adriaens (Belgium, Tunisia)

Onychomycosis is a fungal nail infection, frequently caused by dermatophytes, which occurs in 2−14% of Western adults. The present study was set-up to evaluate efficacy and safety of a water-based, peelable nail polish, which acidifies the nail environment (Excilor Forte® in Europe; Excilor Ultra® in UK) versus a 5% amorolfine nail lacquer for topical treatment of mild to moderate onychomycosis. A total of 102 adults were randomized in this open, prospective, blinded trial. The investigational product was applied once-daily and the amorolfine lacquer applied and removed weekly for 180 days. Clinical efficacy was evaluated at baseline and days 30, 60, 120, and 180. All patients underwent microbiological testing (at baseline and study end). Primary objective of this trial was the change in the percentage of healthy nail surface at day 180. The percentage of healthy surface between baseline and day 180 increased with 11.8% in the test product group and 13.2% in the amorolfine group which was statistically comparable. Both treatments resulted in significant ($p < 0.05$) improvement after 180 days (versus baseline) for nail dystrophy, discoloration, nail thickening, and healthy aspect but effects were more pronounced in the test product group. Clinical performance of the test product was further confirmed by the frequency of patients with onychomycosis improvement or success (completely cured) at the end of the study: 96.0% (test product) versus 79.6% (amorolfine). Microbiological results and improved quality of life further confirmed clinical efficacy. Both treatments were well tolerated and appreciated for their properties and efficacy. The present trial confirmed clinical performance of daily acidification of the nail, as reflected by: 1) comparable increase of percentage of healthy nail surface following treatment with test product versus amorolfine; 2) the overall improvement of other onychomycosis-related parameters; 3) user convenience; and 4) absence of side effects. These data indicate that an aqueous, acetic acid-based, peelable solution can be a convenient, safe and equally effective alternative for the topical management of onychomycosis.

[147]

Comparative characteristics of methods of assessment of condition of the nail plate by the patients with psoriatic onychodystrophy

Halnykina Svitlana, Olena Pogoretska (Ukraine)

According to the data in literature it is known that 25% of patients with psoriasis suffer from psoriatic onychodystrophy. In some clinical cases, psoriatic onychodystrophy may be the only manifestation of psoriasis and manifests before pre-rash. The aim of the study was to perform comparative analysis of the assessment methods of the state of nail plate at the patients with psoriatic onychodystrophy with the help of indices NAPSI(Nail Psoriasis Severity Index) and N-Nail (Nail psoriasis activity index). Under supervision there were 50 patients with psoriatic onychodystrophy. Among them there were examined 27 people and 23 women. Average duration of disease varied from 1 to 15 years. All patients were examined according to the Napsi and N-Nail index criteria. After research the following results were received: according to Napsi index: 18 patients had light degree of affect (up to 20 grades). 23 had average degree (20–40 grades). 9 had severe degree (40–80 grades) N-Nail: 20 patients has minimal activity (up to 50 grades). 23 had average activity (50–100 grades). 7 had high activity (100–150 grades). Both methods allow assessment of condition of the nail plate to determine the degree of nail affect, as well as the effectiveness of treatment. However, the N-Nail index is simpler and more effective in dermatological practice.

[148]

The nail changes in patients with alopecia areata

Karolina Kaaz, Agata Puchalska, Katarzyna Marcinów, Justyna Garbowska, Adam Reich, Jacek Szepietowski (Poland)

Alopecia areata (AA) is a common autoimmune skin disease. Nail changes are frequently observe in patients with alopecia areata, but their nature have not been thoroughly investigated. This study was undertaken to analyse the relationship between nail abnormalities and other features of AA. The study group consisted of 100 AA patients (73 adults: 47 fe-

males and 26 males; 27 children: 19 girls and 8 boys) with the mean age 30.4 ±16.8 years. The mean duration of the AA was 7.0 ±10.2 years. All patients underwent anamnesis and physical examination including a detailed evaluation of nail abnormalities. The degree of nail involvement was evaluated with modified Nail Area and Severity Index (NASI). The obtained results were analyzed statistically. Nail abnormalities were observed in 82 (82%) patients. No differences were observed between men and women. Fingernails were more commonly affected (n = 80) than toenails (n = 51). Moreover, 48% of AA patients had both fingernails and toenails involvement. Longitudinal ridges (n = 61), nail pitting (n = 35) and roughness (n = 34) were the most frequent observed nail changes within fingernails, while longitudinal ridges (n = 32) and roughness (n = 22) within toenails. Interestingly longitudinal ridges on fingernails was significantly linked with loss of eyebrows ($p < 0.05$) and eyelashes ($p < 0.01$) while longitudinal ridges on toenails with alopecia universalis ($p < 0.01$). Nail lesions are common and important feature of alopecia areata. Further studies are required to analyze the relationship between nail abnormalities and prognosis of patients with alopecia areata.

[149]
Ingrowing nails – treatment options and practical tips

Justyna Sicińska, Magdalena Jasińska, Barbara Borkowska, Irena Walecka (Poland)

Ingrowing nails may pose a major medical problem due to pain, discharge, problems with walking and disfigurement. For successful nail therapy, profound knowledge of the anatomy, physiology and pathology of the nail organ are a must. Certain surgical skills are also needed for possibly atraumatic procedures. For ingrowing nails, surgical approach more often applied rather than nonsurgical. Current literature as well as authors' experience on multiple treatment techniques including partial matricectomy combined with phenolization, CO_2 laser treatment and electrocoagulation will be presented. Conservative as well as surgical methods are important in the treatment of ingrowing nails. Proper patient's assessment as well as qualification of adequate treatment are a key to successful therapy of this condition.

[150]
Involvement of nail apparatus in pemphigus vulgaris in ethnic Slavs

Monika Bowszyc-Dmochowska, Paweł Pietkiewicz, Justyna Gornowicz-Porowska, Paweł Bartkiewicz, Marian Dmochowski (Poland)

Pemphigus vulgaris (PV) lesions have a tendency to localize around natural body orifices. The aim here was to analyze the involvement of nail apparatus in PV. Sixty seven ethnic Slavs PV patients on photographic files archiving initial presentation were retrospectively evaluated. PV was diagnosed using combination of clinical data, H + E histology, direct immunofluorescence of plucked scalp hair and/or perilesional tissue also for IgG1 and IgG4 deposits evaluation, indirect immunofluorescence on mosaic substrate and/or monkey esophagus, ELISA with desmoglein 1/3 or multiparametric ELISA. The nail apparatus involvement was found in 9 of 67 patients (13.4%; 3 females and 6 males). Periungual fingernail lesions were found in 6 patients (2 females, 4 males), whereas periungual toenail lesions in just 3 patients (1 female, 2 males). It is concluded that nail apparatus involvement is infrequent in PV in ethnic Slavs. Thus, nail apparatus lesions can be misleading when practicing dermatologists examine just periungual body areas whereas lesions elsewhere are overlooked and/or misinterpreted; but, conversely, it can be invaluable clinical hint as to PV diagnosis at the clinical level when entire cutaneous and accessible mucous membranes surfaces are examined as well as symptoms and medical histories meticulously analyzed.

[151]
Retronychia. A diagnostic challenge for clinicians in dermatology

Karolina Englert, Andrzej Jaworek, Anna Wojas-Pelc (Poland)

Inflammation of the skin around fingernails or toenails is a common issue in everyday dermatological practice. The diverse etiology of this condition includes bacterial and fungal infections and abnormal growth of nail plates.

The aim of this report is to present an interesting case of retronychia as a cause of chronic inflammatory process of the right hallux.

A male patient in his mid-forties was referred to the Dermatology Department due to occurrence of

pain, erythema and edema of his right hallux with the thickened toenail. This condition had been present for a few months and was resistant to topical antibiotics. There was no family history of melanoma. The history of trauma was not certainly admitted by the patient. Nevertheless, given this clinical presentation, we considered retronychia as the most probable diagnosis. Surgical avulsion of the nail plate was performed. Histological examination of the nail excluded the presence of malignancy. On the follow up, regrowth of the nail was observed with no signs of recurrence. Retronychia is the term used for proximal ingrowth of the nail and was first described by De Berker and Rendall in 1999. This condition is more frequent among women and it mostly affects halluces. The factors regarding the cause of disease comprise (micro)trauma. With physical injury the longitudinal growth of the nail is disrupted leading to separation of the nail plate from the matrix. This creates a proximal ingrow of the nail and subsequent inflammation of the proximal nail fold. In differential diagnosis several tumors such as: Bowen disease, glomus tumor, squamous cell carcinomas, keratoacanthomas, amelanotic malignant melanomas as well as common onychocryptosis should be considered. Retronychia should be suspected in the event of chronic proximal nail fold inflammation. Avulsion of the nail confirms the diagnosis and simultaneously constitutes therapeutic regimen management.

[152]
A young patient with dystrophy of 11 nails

Zofia Mazurek-Durlak, Anna Wojas-Pelc (Poland)

Isolated psoriasis of the nail and onychomycosis are common causes of nail dystrophy. The psoriatic lesions of the nail might also be affected by secondary infection. Differential diagnosis is challenging in some cases and treatment is quite different. The medical history may provide important clues but might also distract from the correct diagnosis. A 37-year old female patient sought dermatologist due to nail lesions persisting since adolescence. The family history of psoriasis was positive. The father of the patient suffered from diabetes and had had similar nail lesions for years. The patient denied use of hybrid nail polish and artificial nails or any nail trauma. Clinically all toenails and one fingernail were dystrophic with white discoloration, onycholysis and uneven borders. The patient tried antifungal solutions with no effect. The first mycological culture was negative. Treatment with topical calcipotriol with betamethasone led to no improvement. The second mycological culture and light microscope examination revealed Trichophyton rubrum. Due to statin use, treatment with systemic terbinafine was started. The treatment was finished after 3 months. After 6 months follow up significant improvement was observed.

Multiple nail onychomycosis is often seen in elderly people but is rare in younger patients. Nail dystrophy in young patients might be caused by a fungal infection and it should not be excluded from the differential diagnosis even if the culture is negative.

[153]
Siblings with pachyonychia congenita

Anna Kruszewska, Dorota Wilamowska-Kokoszko, Agnieszka Owczarczyk-Saczonek, Waldemar Placek (Poland)

Pachyonychia congenita is a group of autosomal dominantly inherited disorders of keratinization. It is caused by mutations in one of keratin genes. The disorder affects the skin (especially palms and soles), nails and mucous membranes. We report a case of siblings: 15-years-old sister and 8-years-old brother with clinical signs of pachyonychia congenita — pachyonychia, palmoplantar hyperkeratosis and oral leukokeratosis. Pachyonychia congenita is usually diagnosed by its clinical appearance. Identification of a change in one of genes associated with pachyonychia congenita confirms the diagnosis. The condition is not associated with a reduced lifespan; however it can negatively impact quality of life.

[154]
Beau lines. The first Polish case of a patient with Beau lines and rheumatoid arthritis

Karolina Pełka, Andrzej Jaworek, Anna Wojas-Pelc (Poland)

Beau lines are included to the group of nail dystrophies with characteristic clinical findings. They appear due to pause in cell growth in the nail matrix. The progression of disease, duration and location within

the matrix determine whether the nail condition is described as Beau lines, onychomadesis or retronychia. The most frequent initiating factor is trauma. However they can occur not only after infectious and autoimmune diseases but also as a result of hereditary diseases (Heimler syndrome, hyper-IgM syndrome) and taken medications. We present a case report of a 68-year-old patient who was admitted to the outpatient clinic because of transverse depressions on the nail plate. Patient denied any infectious disease in past however she was suffering from rheumatoid arthritis from 20 years. On inspection and palpation of nail plate we could notice deep, transverse depressions on nail plates of middle and ring fingers of both hands. What is more we could notice the swelling and tenderness of the interphalangeal distal joints (DIP). We advise patient to observe nails and cure primary condition because as long as underlying condition is eliminated and nail matrix is not permanently scared then we can expect complete resolution without any specific treatment. When the look of the nails is troublesome for patients we can advise using gel nails follow by gentle polish or treatment with topical corticosteroid and high concentrate urea under occlusions. Beau lines are nail dystrophies which represents the periods of arrest of cell growth in nail matrix. Eliminating the primary cause, withdrawing medication and avoiding damage of nail matrix can lead to complete resolution without specific treatment.

[155]
Multiple longitudinal melanonychia in Caucasian female. Case report and review of the literature

Agnieszka Snarska-Drygalska (Poland)

Melanonychia refers to a brown-black longitudinal band on fingernail or/and toenail. Hyperpigmented nail bands are not uncommon in African, latino and Asian patients but is distinctly uncommon in white patients. Caucasian woman aged 25 years presented to our outpatient clinic with a 9 years history of asymptomatic continuously progressing longitudinal brown bands on her finger and toenails. There was no history of trauma to her nails. She was ineffectively treated with oral terbinafine for 6 months due to suspected onychomycosis. Medical history was unremarkable. A number of condition can cause longitudinal melanonychia.

[156]
Onychomycosis: clinical features and management

Nejib Doss (Tunisia)

Onychomycosis is a very common nail infection with a worldwide prevalence which ranges between 5 to 70% according the studies. Most common pathogens are dermatophytes, but also yeasts (e.g. Candida albicans), and non-dermatophyte molds. Depending on the location and the route of pathogen penetration, four different types of onychomycosis have been characterized: 1) disto-lateral onychomycosis; 2) white superficial onychomycosis; 3) proximal subungual onychomycosis; and 4) total onychodystrophy. Disto-lateral subungual onychomycosis is the most common form and is usually caused by Trichophyton rubrum, which invades the nail bed and the underside of the nail plate. This classification is crucial for a better management of these diseases. The diagnosis relies on: 1) clinical signs; 2) dermoscopic features; and 3) mycological examination will be discussed the different differential diagnosis and especially the relation between onychomycosis and nail psoriasis

[157]
Pachydermoperiostosis – a case report

Anna Waśkiel, Patrycja Gajda, Agata Szykut, Adriana Rakowska, Małgorzata Olszewska, Lidia Rudnicka (Poland)

Pachydermoperiostosis, also known as primary hypertrophic osteoarthropathy is a rare hereditary disease, first described by Friedreich in 1868. It is characterized by digital clubbing, pachydermia and periostosis. The disease should be distinguished from secondary hypertrophic osteoarthropathy that may be associated with malignancy or other conditions such as congenital heart disease, liver cirrhosis, pulmonary fibrosis, biliary atresia and inflammatory bowel diseases.

A 55-year-old woman was admitted to the Department of Dermatology with thirty- year history of digital clubbing associated with distal interphalangeal joints pain and palmoplantar hyperhidrosis. On physical examination, digital clubbing with periungual erythema of the hands and feet were observed. Moreover, distal onycholysis with sub-

ungunal hyperkeratosis were present. A radiograph of both hands revealed acroosteolisis and soft tissue swelling and thickening. Secondary causes of hypertrophic osteoarthropathy were excluded. Full blood counts, urinalysis, electrolytes, urea, creatinine and liver function tests were within normal limits. Chest radiograph and abdominal ultrasound were normal. Based on the clinical and radiological findings, a diagnosis of pachydermoperiostosis was suggested. Pachydermoperostosis is rare cause of digital clubbing. Nevertheless, it should be considered when secondary causes of hypertrophic osteoarthropathy are excluded.