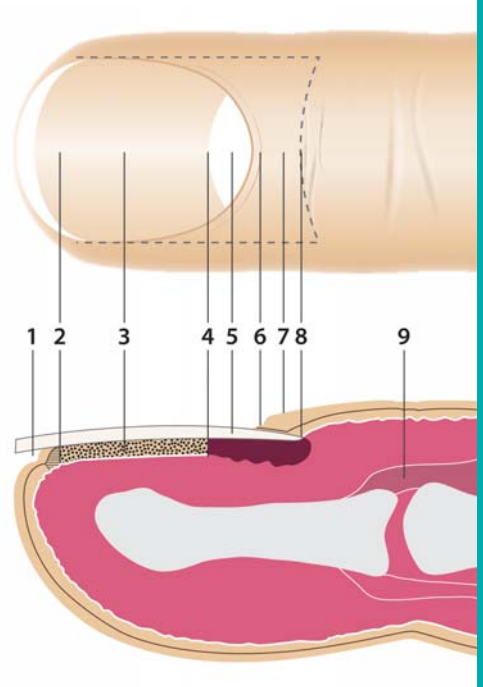
English edition
2009

n°2

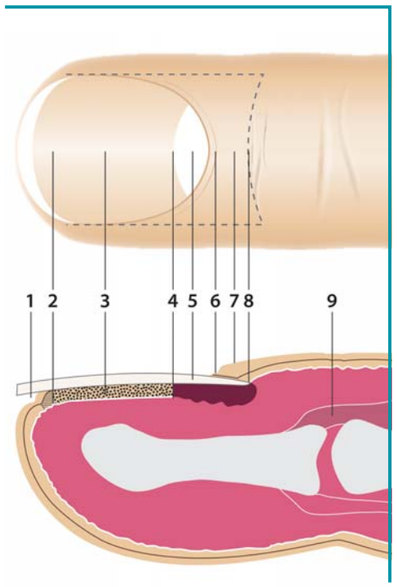
The nail



What's new ?

Pierre Fabre
DERMATOLOGIE

The nail - What's new ? n° 2



We have prepared this new issue of "The Nail, What's new ?" with great enthusiasm.
Last year it was a new baby and we were somewhat anxious while waiting for the response of our English speaking colleagues to the first issue in the international language. However the reactions were well beyond our wildest expectations. Nonetheless some readers did reproach us for not having translated the first three issues. They wanted to know why the English N° 1 corresponded to the French N° 4. This was extremely encouraging for us and made those who had carried out this enormous work feel exhilarated.

This year we welcome the arrival of a new participant: Dr Bianca Maria Piraccini, from Bologna (Italy) whose competence in onychology no longer has to be proved.
When we created this Journal we had planned to choose the articles arbitrarily. The computer comes up with a certain number of articles based on specific key words and we make our choice according to the titles. The co-authors of this Journal received ten articles that they studied and then selected six. This game of dice is quite interesting, as this year for example, we noticed that many of the publications on onychology from India deserved to be read. We also think that the article chosen by Bianca Maria Piraccini "Elevated nail fold plexus visibility…" will amaze more than one reader.

This lottery is very amusing because of the surprising discoveries it brings to light. Maybe next year we will suggest to Dr Coustou an entirely different way of selecting articles -simply because we not always want to depend on the luck of the draw. Instead we will try and choose topics from our personal reading. We will submit this idea to the Editorial Committee and wait to see what happens. You will see the result next year !

As always, we have dug into our personal photo collections to illustrate the articles.
We wish to thank Dr Coustou, who, in spite of his new job will continue to look after this Journal, published in both English and French. We thank him very sincerely and we will endeavour to lighten his task as much as possible. Finally, please keep in mind that our readers' opinions are always invaluable to us in order to improve this publication - which is now Yours.

Robert Baran

The nail - What's new ? n°2

Condensed selected articles with commentary

contents

The nail - What's new ? n°2

Condensed selected articles with commentary

Robert BARAN

Nail involvement in pemphigus vulgaris

Carducci M, Calcaterra R, Franco G, Mussi A, Bonifati C, Morrone A. Nail involvement in pemphigus vulgaris. Acta Derm Venereol 2008; 88: 58-60.

Nail involvement in PV is relatively uncommon, although a recent study shows that it may be present in up to 22% of patients with PV. Author's data confirms this finding; nail involvement occurred in 30 % of our patients.
The most common nail changes in PV are onychomadesis (Fig 1), paronychia (Fig 2), trachyonychia, onychorrhexis, onycholysis, Beau's lines, pterygium, cross ridging, pitting, subungual haemorrhage, nail plate discoloration, and periungual bullae (Fig 3). There is only one paper describing nail involvement during pemphigus foliaceus (PF). None of our 5 patients affected by PF showed nail involvement.
The three patients of this study with PV had common clinical figures of nail involvement, such as onychomadesis, paronychia, onychorrhexis, Beau's lines and pterygium, except for the transverse leukonychia in case 1: this nail change has not been described previously in the course of PV. Generally, fingernails were more often involved than toenails and the temporal relationship of nail involvement in PV is variable: it may be noted as part of the initial presentation, concomitant with disease relapse, or as a sign heralding exacerbation. In our series, nail involvement appeared after the first cutaneous or mucosal manifestation of pemphigus. Biopsy of the nail bed, matrix or fold for routine histological examination and direct immunofluorescence (DIF) should be performed to assess the primary involvement of the nail. In these cases, nail biopsy was not performed because this procedure would have resulted in unnecessary discomfort to the patient, and in their opinion no information would have been gained.
Systemic therapies, traditionally used in the treatment of PV, are necessary to control nail manifestations, because topical drugs have been reported to be ineffective. Nail recovery is usually complete, leaving no permanent disfigurement. On the other hand, in case 2, the paronychia and onychorrhexis were still present after 6 months therapy, probably because the patient was affected by a very aggressive and non-responsive form of PV with persistent high serum levels of antibody anti-DSG3; the pterygium persisted, as it is a cicatricial stage.
The reason for the rarity of primary nail manifestation in PV is unclear. Although the nail bed, matrix and fold are epithelial structures with an epidermal layer similar to that of the skin and mucosa surfaces, there are likely to be anatomical, structural and molecular differences. It has been hypothesized that a possible reduced expression or relativity lower density of PV auto-antigen in the nail unit, compared with the cutaneous or mucosal epidermidis, or a relative sequestration of the auto-antigen from the immune system in the nail may occur in what is an immunologically "privileged" site.
The nail matrix has a pluristratified epithelium similar to the normal epidermis, but without a granular layer, and the nail bed epidermis is usually no more than two or three cells thick. Therefore, we postulate that local expression of DSG1 and DSG3 is low and that nail involvement may occur only when a high concentration of auto-antibodies to the two desmosomal glycoproteins is present in the serum, as in our patients.
A better understanding of the nail unit and further investigations are required to elucidate these hypotheses.

COMMENTARY R. BARAN

In fact, nail involvement is probably not as uncommon as reported.
Another recent paper has appeared this year: Habibi M, Mortazavi H, Shadianloo S et al. Nail changes in pemphigus vulgaris. Int J Dermatol 2008; 47:1141-4.
Seventy-nine patients with pemphigus vulgaris, including 59 new patients and 20 patients in relapse, were entered into the study. Microscopic examination and culture for fungus were performed on all clinically abnormal nails. Twenty-five (31,6%) of the 79 patients showed nail changes with paronychia (n = 8) and onychomadesis (n = 6) being the most common. One patient in relapse had onychomycosis. The frequency of nail changes in fingers affected by periungual bullae was significantly higher than in other fingers ($P < 0.05$). The percentage of nail changes was higher in patients with a larger number of skin bullae than in those with a longer duration of disease ($P < 0.05$).
Nail changes in pemphigus vulgaris are quite common and are related to the number of skin bullae when there is periungual bullae.
It worth reminding the reader of a less recent article on the same topic about 1200 cases of pemphigus vulgaris (Chams-Davatchi et al. Int J Dermatol 2005; 44: 470-476). •

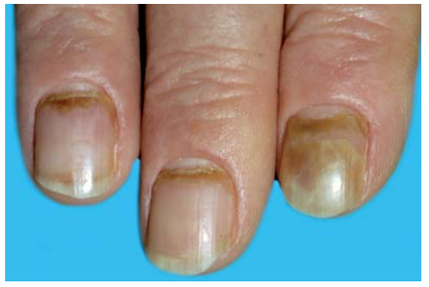


Fig 1 - Onychomadesis on multiple digits.

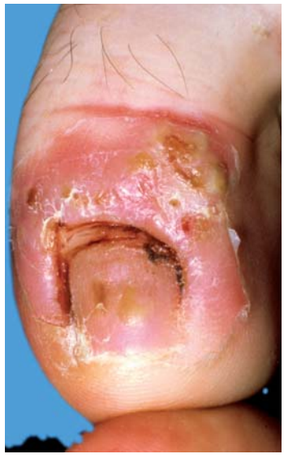


Fig 2 - Paronychia associated with nail dystrophy.

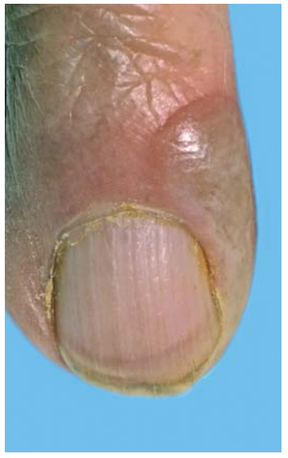


Fig 3 - Bulla of the nail fold in pemphigus.

Robert BARAN

Subungual myiasis in a woman with psychiatric disturbance

Balcioğlu C, Ecemiş T, Ayer A, Özbel Y. Subungual myiasis in a woman with psychiatric disturbance. Parasitology Int 2008; 57: 509-11.

A 65-year-old female was referred to Manisa State Mental Hospital, with an initial diagnosis of chronic psychosis. She had been living alone for almost 10 years in her house, which was found to be filled with the garbage she had collected with no water or electricity. During her psychiatric examination, she was conscious, cooperating but not in verbal communication; the necessary treatment was given following an initial diagnosis of chronic psychosis.
In the physical examination, she was found to be in a rather poor condition in terms of self-care; she was physically weak and asthenic and due to dirt her hair was rigid. As numerous larvae were detected in the subungual region of her left big toe, consultation was asked for at the Parasitology Department of Celal Bayar University.
The sample of the nail was taken by scraping and treated with 10% potassium hydroxide. Fungal hyphae were seen in the nail sample using direct microscopy. The sample was cultured on Sabouraud dextrose agar and potato dextrose agar, with or without chloramphenicol and cycloheximide. Macroscopic and microscopic examinations with lactophenol cotton blue followed by a urease test were used for the samples, which subsequently revealed *Trichophytum rubrum*. Haematological and biochemical parameters were all found to be within normal ranges.

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Robert BARAN

Subungual myiasis in a woman with psychiatric disturbance

A total of 17 larvae were removed mechanically from the big toe. The larvae were transferred to the Celal Bayar University School of Medicine, Department of Parasitology in 70% of alcohol solution and were identified as the third stage larvae of *Calliphora* spp. according to their stigmatic and cephaloskeleton structures. All the larvae were collected from the left toe, followed by the surgical withdrawal of both nails and the patient was given oral antimicrobial treatment to prevent secondary infections. Required daily care of the nails was carried out regularly for five days, and the final control examination showed total recovery after three months.

Myiasis occurs predominantly in rural areas and is associated with poor hygienic conditions. In urban areas, this pathological condition is usually found among people with poor personal hygiene and a low level of education. The disease occurs mainly on uncovered parts of the body, such as the arms, legs (furunculoid myiasis) and the head (cavitary myiasis).
There have been two case reports on ophtalmomyiasis and nosocomial oral myiasis caused by *Sarcophaga* spp. larvae in Turkey. 36 different flies are known to cause human myiasis. Lucilia and Calliphora belong to the same family, Calliphoridae also known as blowflies, their degree of parasitism is facultative and their main anatomical site of parasitism is skin and wounds. So far, only one case of external myiasis has been reported in Turkey, located on the toes of a diabetes patient and caused by Lucilia sericata. On the other hand, the first subungual myiasis was reported in a 47-year-old Caucasian female in 1978 and was caused by M. domestica after trauma and subungual haematoma. The first report of subungual myiasis was recently reported by Dgaci et al, which was caused by *Sarcophaga* spp. The present patient is the second reported case of subungual myiasis in Turkey, but the first with *Calliphora* spp. larvae.
The larvae may invade diseased tissues of man or animals. In these cases, the larvae may affect only the necrotic areas or the healthy adjacent tissue, as well. The larvae of *Calliphora* spp, develop on open wounds. Due to the living conditions of the present patient, a detailed psychiatric examination was required and the patient was diagnosed as suffering from chronic psychosis. Mycological examination revealed *T. rubrum* infection on the nail samples. This infection may facilitate the settlement of the larvae due to the separation of the nail plate. The nails of the toes are convenient locations for the development and growth of the larvae of *Calliphora* spp. According to the classification of the myiasis, semi-specific or facultative myiasis was observed in the patient as a super-infestation after *T. rubrum* infection.

COMMENTARY R. BARAN

Insects adore fungus ... (Faulde MK et al (JEADV 2007; 21: 841-43) reported the first case of human subungual infestation by *Limothrips cerealium* (Fig 1) associated with an infection of *T. mentagrophytes* (Fig 2). It is interesting to note that in 2004 the Taiwanese authors had already described a mycotic nail infested by *Liposcelis bostrychophila Badonnel.*

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Fig 1 - First case of human subungual infestation by *Limothrips cerealium* (Courtesy of MK Faulde, Germany).

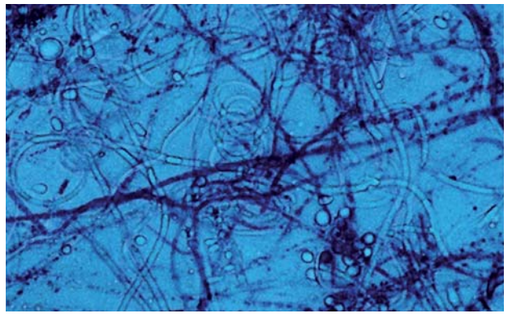

Fig 2 - Infection by *T. mentagrophytes* invading a thick dystrophic nail. (Courtesy of MK Faulde, Germany).

Robert BARAN

Trichophyton rubrum autoinoculation from infected nails is not such a rare phenomenon

Szepietowski JC, Matusiak Ł. T*richophyton rubrum* autoinoculation from infected nails is not such a rare phenomenon. Mycoses 2008; 51: 345-46.

This is the case of an 87-year-old retired Caucasian male patient in generally good health but with a 2-month history of painful plaques on the bearded area of the face and who was admitted to our department. The patient denied any recent contact with animals. On examination, there were acute indurated plaques of confluent erythema with pustules on the surface located on the chin and on both the left and right cheeks. A crusted nodular lesion was also seen on the upper lip. Some of the hairs within the plaques were lost. All the lesions were tender and the patient had problems with shaving. There was no regional lymphadenopathy. Moreover, examination of the nails showed distal and lateral subungual onychomycosis on the fingernails of the right hand (Fig 1) and on all the toenails. The patient had been suffering from toenail onychomycosis for over 3 years; fingernails became involved 2 years later. Wood's lamp examination of the lesions on the face did not show positive fluorescence. Scrapings and hairs were taken for direct mycology. Examination in 20% potassium hydroxide with addition of dimethyl sulphoxide showed typical hyphae in the samples. Direct mycological examination of the fingernails and toenails was also positive. The causative pathogen of both tinea barbae and onychomycosis was identified in culture on Sabouraud's agar as *Trichophyton rubrum*.
The patient was given a dose of 250 mg oral terbinafine a day. Moreover, topical 1% terbinafine cream was applied twice daily. Within 4 weeks, the lesions on the face were completely cured with no destruction of hair follicles. The drug was well tolerated and no adverse effects were observed. The patient continued oral terbinafine as a result of onychomycosis for the next month, then disappeared and was not available for further evaluation.
Tinea barbae occurs mainly among farm workers, as animals constitute the main source of infection. Almost always kerion-like lesions are caused by zoophilic dermatophytes such as Trichophyton mentagrophytes var. granulosum or Trichophyton verrucosum. The anthropophilic fungus - *T. rubrum* is the most commonly isolated causative agent of superficial fungal infection in Poland.
Formation of kerion-like lesions caused by *T. rubrum* infection is an extremely rare phenomenon. It is so rare, that physicians hardly ever see more than one patient during their professional careers, if that.

COMMENTARY R. BARAN

If the ungual dystrophy of this patient presenting with multiple kérions-like lesions required a treatment by terbinafine, it should be noted that isolated kerions are treated with systemic corticoids in association with oral antifungal - or even without this, according to some authors.

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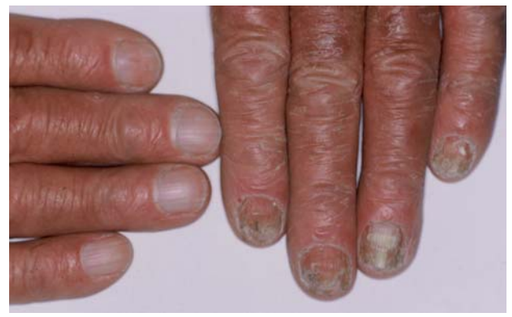

Fig 1 - This picture shows unilateral involvement of the hands, where all the fingers are infected by *T.rubrum.*

Robert BARAN

Longitudinal leukonychia in Hailey-Hailey disease: a sign not to be missed

Kumar R, Zawar V. Longitudinal leukonychia in Hailey-Hailey disease: a sign not to be missed. Dermatol Online J 2008; 14: 17.

A 54-year-old male dentist presented with a painful, erythematous, fissured plaque involving the left groin and adjacent scrotal skin which had been present for the last ten years. The lesion was intermittently painful especially during the summer months, which restricted his mobility. He had been treated at different centres with various medications including topical antifungal creams, lotions, and powders. His various treatments included clotrimazole and miconazole; topical antibiotics such as framycetin, fucidic acid, mupirocin, and sisomicin; and systemic antibiotics including erythromycin, roxithromycin, cephadroxyl, and ampicillin-cloxacillin. None of these had significantly improved the lesion.

On examination, in addition to the plaque involving the left groin, he had asymptomatic white longitudinal bands on all his fingernails (Fig 1), but most prominently on the thumbs. Closer inspection of the thumb nails revealed flat longitudinal bands in addition to a few ridges. Affected nails were not fragile and did not show distal notching. In addition to being white, parts of the nail also showed longitudinal ridging. His toenails, palms, soles, and mucosae were affected. There was no evidence of any associated systemic disorder or any other cutaneous disease, including Darier's disease. There was neither a relevant drug history nor was there a past or family history of psychiatric illness. A careful study of family history revealed that his mother, elder brother, and younger sister had a similar kind of cutaneous disease affecting both axillae and groins with a history of exacerbation in the summer months. In spite of the authors' efforts, his brother and sister could not be contacted for detailed examination. His mother had died of old age a few years before. Examination of his son revealed subtle longitudinal white bands involving the fifth and middle fingers, but no skin eruptions.

Repeated skin scrapings for fungus were negative. Other investigations including complete blood counts, blood sugar, urinalysis, liver function tests, and serological tests for syphilis and HIV antibodies were negative. A skin biopsy taken from the edge of the plaque in the left groin showed spongiosis, partial acantholysis with intraepidermal cleft formation and the typical "dilapidated brick wall appearance" of the epidermis, thus confirming a diagnosis of HHD. Direct immunofluorescence was negative.

He was treated with a combination of sodium fusidate and betamethasone dipropionate 0.05 percent cream applied locally twice a day for three weeks; the plaque completely resolved leaving post-inflammatory hyper pigmentation. There was no recurrence during the next six months. The following summer, he developed a recurrence which was rapidly controlled by the same topical medication. The nail findings remained unchanged during and after treatment.

Discussion

Hailey-Hailey disease (HHD) is a chronic disease with exacerbations and remissions. It is often described as "Benign Pemphigus" since it is not life-threatening as is pemphigus vulgaris. However, it causes significant morbidity. The nail involvement in HHD has been described in one study and one case report. In this case of HHD, the nail involvement was asymptomatic and familial; it mainly affected the thumb nails. During the two year period of observation there was no change in the nail signs during treatment and regression of the cutaneous eruption in the groins. It is likely that the nail lesions are long-lasting and do not correspond to the disease activity. Hence, these do not seem to have prognostic importance. Thus, nail involvement in this case was seen in concordance with that observed by Burge. A similar observation of longitudinal leukonychia in father and son was described by Kirtschig et al. The nail involvement in this case did not bother the patient. The patient and his son did not persist with the treatment nor did they consent to nail biopsy. It will be important to watch for signs of development of the typical erosive plaques in the son; mild nail changes in his case may be an early sign of the disease. The patient was informed about the possibility of future development of HHD both for himself and his son.

COMMENTARY R. BARAN

The association of recalcitrant dermatitis of the folds and / or the nape of the neck, or the neck and longitudinal leuconychia should always evoke the diagnosis of Hailey-Hailey disease which should be checked by cutaneous biopsy. •

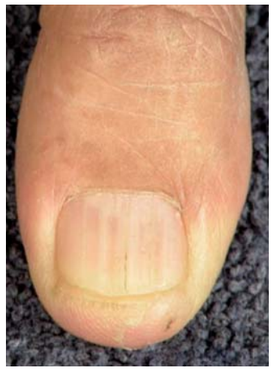

Fig 1 - Isolated longitudinal leuconychia in Hailey-Hailey disease. (Dermatology Online Journal 2008; 14: 17.

Robert BARAN

Tuberous sclerosis - A multi system disease

Arora V, Nijjar IS, Singh J, Sandhu PS. Tuberous sclerosis – A multi system disease. Indian J Ped 2008; 75: 77-79

A 10- year-old boy presented with a history of seizures off and on for the last six months. He was mildly mentally retarded. There was no history of headache, chest pain, shortness of breath or any urinary or bowel complaints. He was the eldest of three siblings. The other two children were normal. There was no family history of any such skin lesion, of fits or mental retardation. No such history was available in the first-degree relatives either.

On examination, the child was of lean build and was well oriented in time and space and afebrile. The vital signs were stable. There were multiple small skin coloured papules over the nose and both cheeks (Fig 1). A small reddish projection was noted at the base of the nails in the left third finger and right second finger indicative of an ungual fibroma.

He was referred for MRI of the brain, which revealed multiple lesions in the cortex of both cerebral hemispheres consistent with cortical tubers (Fig 2). Multiple subependymal nodules were detected jutting into both lateral ventricles.

Ultrasound of the abdomen demonstrated a small mass of intermediate echogenecity, measuring 1.5 x 1.2 cm in size, at the upper pole of the left kidney. A tiny cyst was seen in the interpolar region of the right kidney. No lesion was observed in the liver or pancreas.

Ultrasound of the orbit showed a plaque-like mass in the lateral quadrant of the left eyeball suggestive of retinal hamartoma.

Onset before the age of 5 years with cutaneous changes or with epilepsy is usual, but the disease may remain latent until adolescence. The disease shows variable expressivity even within the same family. It is now recognized that about half of the TSC families are linked to chromosome 9q34 (TSC1) and the other half to chromosome 16p13 (TSC2). The inheritance is autosomal dominant.

The US National Tuberous Sclerosis Association has divided the clinical features into 3 groups: primary, secondary and tertiary. Primary features include facial angiofibroma, multiple ungual fibroma, cortical tuber (histologically confirmed), subependymal nodules or giant cell astrocytomas, multiple calcified subependymal nodules and multiple retinal astrocytomas. Secondary features included an affected first degree relative, cardiac rhabdomyoma, retinal hamartoma, cerebral tubers (radiologically confirmed), non-calcified •••

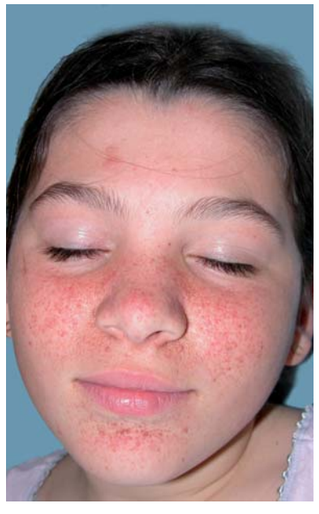

Fig 1 - Angiofibromas of the face (Courtesy of F.Cambazard, France).

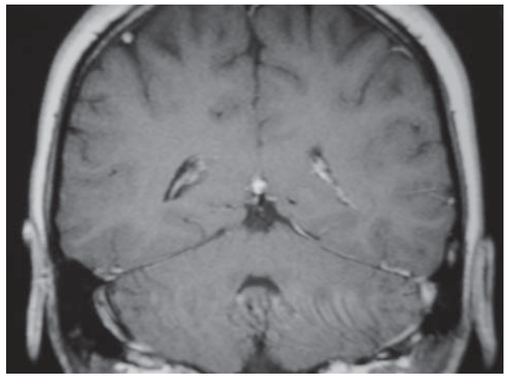

Fig 2 - Calcifications in the cortex of cerebral hemispheres (Courtesy of JF Stalder, France).

Robert BARAN

Tuberous sclerosis - A multi system disease

subependymal nodules, shagreen patch, forehead plaques, pulmonary lymphangiomyomatosis, renal angiomyolipomas and renal cysts (the last two features should be histologically confirmed). Tertiary features are hypomelanotic macules, renal cysts (radiologically confirmed), dental enamel pits, hamartomatous rectal polyps, bone cysts, pulmonary lymphangiomyomatosis (radiologically confirmed) and cerebral heterotoplas, gingival fibromas, hamartomas and other organs and infantile spasm.

For the definitive diagnosis there should be either one primary and two secondary features or one secondary and two tertiary features. Our patient had at least three primary and three secondary features. All these features are found bilaterally. There were, however, a few case reports in which one of the features of the disease was found unilaterally.

The skin lesions are found in 60-70% of cases. There are four characteristic skin lesions: angiofibromas, periungual fibroma (Koenen tumour) (Fig 3), shagreen patch and ash-leaf macules (Fig 4). The angiofibromas are firm, discrete, red-brown telangiectatic papules, 1-10 mm over nasolabial furrow, eyelids, cheek and chin. Periungual fibromas are smooth, firm, flesh-coloured excrescences emerging from nail folds. Shagreen patch is an irregular thickened, skin-coloured plaque, usually over lumbosacral region. Ash-leaf macules are ovoid, white macules, 1-3 cm in size, present over trunk or limbs.

Mental deficiency is seen in 60-70 % of cases and may progress.

The cosmetic appearance is improved by removing angiofibromas with pulse-dye vascular laser (wavelength 585nn) or by carbon dioxide laser. Surgical treatment may be required for relief of symptoms in other organs.

The life expectancy of severely affected infants is poor. Three percent die in their first year, 28% under 10 years and 75% before 25 years. The prognosis for older children or young adults with mild disease is unpredictable.

Well conducted studies estimate that about two thirds of cases are fresh mutations, and the remaining cases are familial in an autosomal dominant pattern of inheritance. For proper genetic counselling mutation studies should be carried out on the affected child. Both genes are studied in sequence. Children of an affected parent should be offered a skin examination for ash-leaf spots, renal and liver ultrasound and cardiac ultrasound at the initial consultation. Prenatal diagnosis is possible with DNA technology, provided mutation in the affected child in known.

COMMENTARY R. BARAN

In a 30 year-old patient I diagnosed STB on Koenen tumours without any other clinical features. Unfortunately, MRI confirmed the diagnosis, revealed by lesions in the cortex of cerebral hemispheres. •

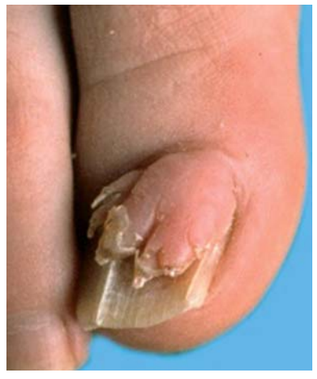

Fig 3- Koenen's tumors on longitudinal nail depression.

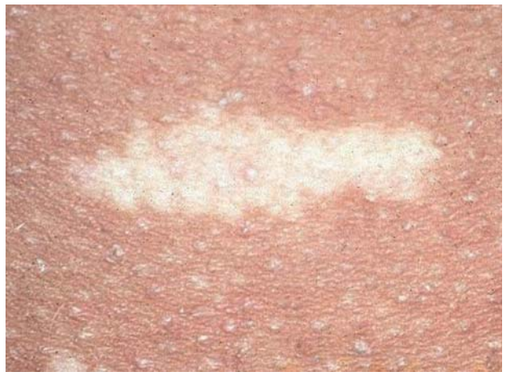

Fig 4 - Hypomelanic as-leaf macule (Courtesy of JPh Lacour, France).

Multiple triangular lunula unguis; a specific finding for the nail-patella syndrome

Dyer JA, Jourdan SJ, Dyer GA. Multiple triangular lunula unguis: a specific finding for the nail-patella syndrome. Mo Med 2007; 104: 506-8.

In the course of casual conversation, a 18 y-o white male was observed to have unusual fingernails. Closer observation revealed the lunula of index, middle, fourth and fifth fingers on each hand to be triangular in shape with the base parallel to the proximal nail fold and the apex pointing toward the free edge of the nail (Fig 1). The thumbnail plates were missing, but shortened nail beds were present. Skin creases over distal interphalangeal joints were reduced or absent.

Review of previous medical records confirmed the presence of clubfeet at birth and subsequent correction, with passing mention of the absence of patellae. Nail changes or the possibility of nail-patella syndrome were not mentioned. The patient is able to walk, lift, and climb stairs without difficulty although his knees "twist" easily when running downhill.

A review of the patient's family history revealed other members exhibiting symptoms of the syndrome. Laboratory studies were normal and radiographic imaging revealed an absent left patella, hypoplastic right patella, bilateral posterior iliac horns, and possible shortened index finger distal phalanges. •••

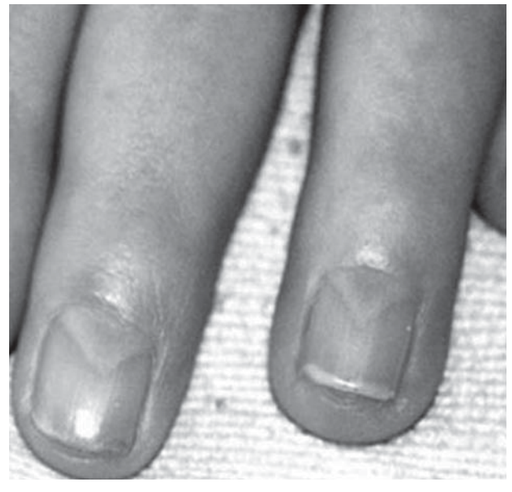

Fig 1 - Triangular lunulae (Courtesy of H. Degreef, Belgium).

Robert BARAN

Multiple triangular lunula unguis; a specific finding for the nail-patella syndrome

Discussion

While Chatelain's family of 1820 was probably the first report, Little is given credit for recognition of the syndrome. Heriditary osteo-onychodysplasia (HOOD) is the most common synonym for NPS. Other synonyms include Fong syndrome, Osterreicher-Turner keiser-Turner syndrome, and nail-patella-elbow syndrome.

Skin findings occur in over 95 % of cases with nail changes being most common. Thumbnails are most frequently involved, with a decreasing frequency of involvement of the index fingernails through the fifth nails. Nail plates may be split, absent, or hypoplastic. When hypoplastic, the ulnar ½ of the thumbnail may exhibit the only abnormality. Involvement is usually symmetric. Toenails are less commonly involved. Decreased or absent skin creases over the distal fingers are reported. Palmoplantar hyperhidrosis has also been noted in NPS.

Triangular lunulae of index and/or middle fingers are noted as a form of nail dysplasia seen in NPS. The patient reported here exhibited triangular lunula on eight of ten fingernails in a bilateral and symmetric arrangement as well as absent distal finger creases.

Hyperpigmentation in a cloverleaf formation at the papillary margin of the iris (Lester iris/Lester sign) occurs in 45 % of cases but was not present in our patient.

In kindred without nephropathy the risk of affected patients developing nephropathy is quite low. In kindreds with nephropathy, the risk of affected patients is 25 % and the risk of terminal renal disease is 10 %. A review of NPS suggests an overall incidence of nephropathy of 48 % of patients and renal failure in 14 %.

Some current management recommendations for patients with NPS include genetic counselling, evaluation for abnormal bone and soft tissue anatomy prior to surgery or intensive physical therapy, and annual screening for renal disease by monitoring blood pressure and urine analysis. In addition, biannual screening for glaucoma in adulthood is recommended.

Long localized to the long arm of chromosome 9 and loci controlling the ABO blood groups, the defective gene has been identified as LMX1B.

COMMENTARY R. BARAN

There are very few pathognomonic signs in medicine, it is therefore interesting to note that hereditary osteo-onychodysplasia syndrome is full of them. Nail signs with atrophy, and/or triangular lunulae, bone signs with iliac horns and the absence of patellae, renal abnormalities and the latest sign described by Itin i.e. absence of distal finger creases. (Fig 2)

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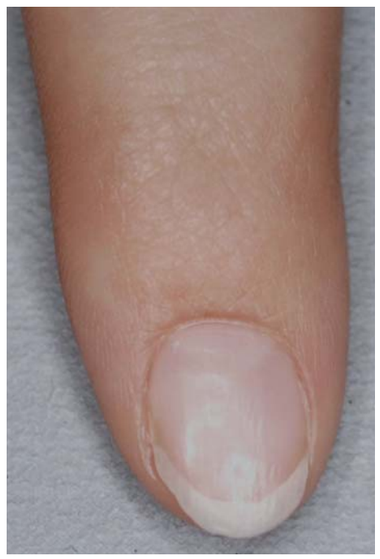

Fig 2 - Absence of distal finger creases (Courtesy of P. Itin, Switzerland).

Osvaldo CORREIA

"Whitish chains": a remarkable in vivo dermoscopic finding of tungiasis

Bakos RM, Bakos L. "Whithish chains": a remarkable in vivo dermoscopic finding of tungiasis. Br J Dermatol 2008; 159: 991-2

In this paper, the authors reported a 31-year-old woman with a painful yellowish papule on the nail fold of her right first toe that appeared one week after vacation on a Brazilian beach. The history and clinical aspects was compatible with tungiasis. Dermoscopic data were very suggestive.

Tungiasis is a benign and usually self limited parasitic disease, presented as a papule or vesicle, 5 to 8 mm in diameter, with a central black dot produced by the posterior part of the flea's abdominal segments. As eggs mature and the abdomen swells, the papules become white, pea-sized nodules. With intralesional hemorrhage, they become black. Toes and periungual areas are the sites of predilection in more than 70% of the cases. In this paper, Tunga penetrans has burrowed into the periungual area. Dermoscopy findings included the previously reported typical brownish-pigmented rings and the grey-blue blotches, but also whitish structures in a chain-like distribution, related to the late stage of maximal growth of the flea, when expelled eggs are visible.

COMMENTARY O. CORREIA

Parasitic diseases from tropical areas are currently common travel-associated dermatosis seen in occidental countries. Globalization, holidays and the current facilities to travel between countries, has given rise to the increase of cutaneous tropical infections. Early diagnosis is essential. Dermoscopy helped us to identify different structures of parasites.

This paper presents new dermoscopic aspects of tungiasis. Another frequent parasitic disease from travellers of Central and South America is furuncular myiasis caused by Dermatobia hominis. The primary lesion consists of a boil-like inflammatory papule with a central punctum exuding a serosanguinous discharge (Fig 1). Dermoscopic diagnosis of furuncular myiasis was recently reported (Bakos R, Bakos L. Arch Dermatol 2007). Dermoscopy revealed a central opening surrounded by dilated blood vessels, and the structure of Dermatobia hominis larva can be recognised (Fig 2). Sometimes lesions are resistant to conservative treatments and need surgical excision (Fig 3). European clinicians must be aware of these tropical diseases in patients with a history of travel or residence in an endemic area and dermoscopy can help them make an early diagnosis.

COMMENTARY R. BARAN

The eye of an expert dermatologist, or a simple magnifying glass, aided by questioning, suffice to diagnose tungiasis.

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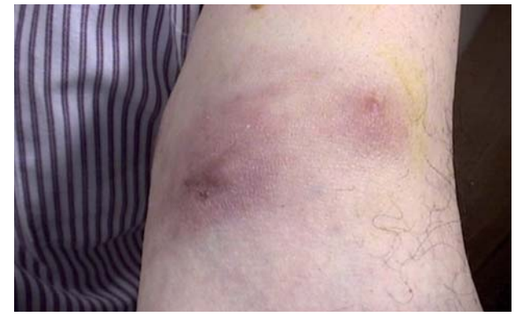

Fig 1 - Furuncular myiasis.

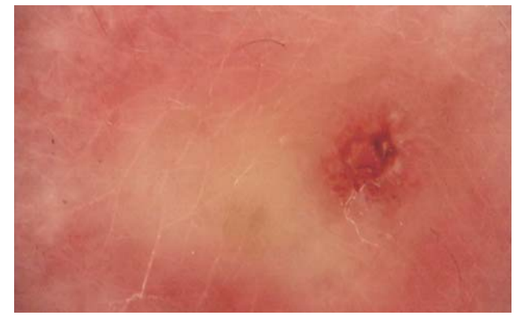

Fig 2 - Dermoscopic diagnosis of furuncular myiasis.

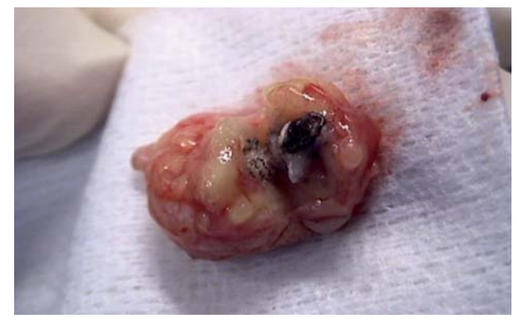

Fig 3 - Clinical view of *Dermatobia hominis* in a resistant lesion surgically excised.

Osvaldo CORREIA

Osvaldo CORREIA

Scleroderma patients nailfold videocapillaroscopic patterns are associated with disease subset and disease severity

Caramaschi S, Canestrini N, Martinelli A et al. Scleroderma patients nailfold videocapillaroscopic patterns are associated with disease subset and disease severity. Rheumatology 2007; 46: 1566-1569

The study described in this paper was designed to evaluate the association of nailfold videocapillaroscopic (NVC) patterns with dermographic and clinical features in a large group of 103 scleroderma patients.
Systemic sclerosis (SSc) is a multisystemic disease of the connective tissue, characterized by microvascular damage with cutaneous and internal fibrosis and immunologic abnormalities. The clinical expression and severity ranges from mild to severe organ damage. The peculiar vascular involvement affects primarily small arteries and capillaries and causes reduced blood flow and tissue ischaemia. Nailfold videocapillaroscopy was performed on 68 patients with a limited form of the disease and 35 with a diffuse form of scleroderma (91 women, 12 men, mean age 54.3 years, median disease duration 7 yrs). Microvascular alterations were classified in three different patterns: early, active and late. Nailfold patterns were significantly associated with disease subsets. Severity of skin, lung, heart and peripheral vascular involvement progressively increased across nailfold videocapilaroscopic patterns, from early to late pattern, as well as homocysteine plasma levels. Patients with the late pattern showed a significantly increased risk of having an active disease, presenting digital ulcers and moderate to severe skin, heart and lung involvement. No significant differences were found between NVC patterns and different variables like sex, age, disease duration and autoantibody profile.

COMMENTARY O. CORREIA

Systemic scleroderma (SS) include limited SS and diffuse SS. Limited SS includes 60% of patients, usually female, older than those with diffuse SS, with a long history of Raynaud's phenomenon with acrosclerosis involvement and a high incidence of anticentromeric antibodies (CREST syndrome). Diffuse SS have a relatively rapid onset and not only acral, but diffuse and systemic involvement, with anti Scl-70 antibodies present in 33%. Skin involvement includes Raynaud's phenomenon and precedes sclerosis by months or years. Non pitting edema of hands and feet, painful ulcerations of fingertips, acrosclerosis hyper and hypopigmentation (Fig 1), thinning of lips and microstomia (Fig 2) are typical clinical features.
Capillaroscopy is the most reliable way of distinguishing between primary and secondary Raynaud's phenomenon through identification of an early pattern of systemic sclerosis. The three different patterns: early, active and late, are defined as follows: giant capillaries and microhaemorrhages (early), increase in these features and loss of capillaries (active), neoangiogenesis, fibrosis and "desertification" (late pattern) (Cutolo M et al. Best Pract Res Clin Rheumatol 2008) (Fig 3).
Compared to this study, other authors have reported that late NVC pattern is related to the age of the patient, disease duration, diffuse pattern and anti-Scl70 antibodies (Cutolo M et al. Rheumatology 2004). Like some others this study shows that nailfold videocapillaroscopy is a simple, non-invasive and useful way to evaluate the stage of the disease in scleroderma patients and provides prognostic information.

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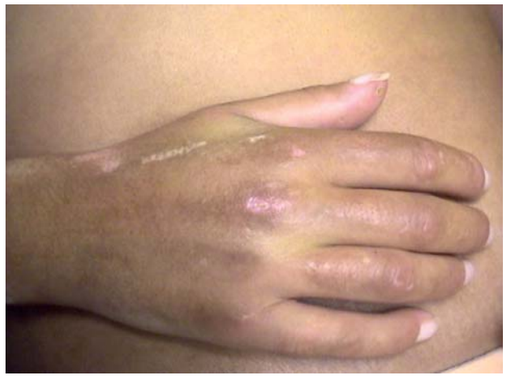


Fig 1 - Acrosclerosis, painful ulceration of fingertip, hyper and hypopigmentation.

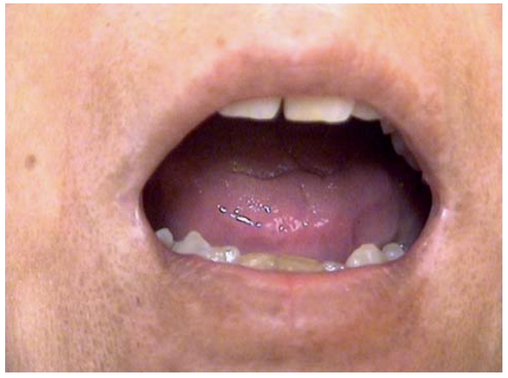


Fig 2 - Thinning of lips and microstomia.

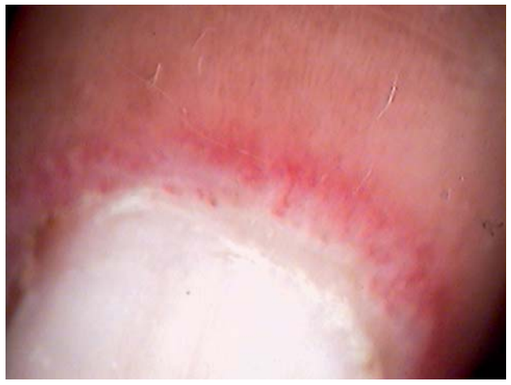


Fig 3 - Neoangiogenesis and fibrosis, on dermoscopy (late pattern).

Osvaldo CORREIA

Improving the sensitivity of the American College of Rheumatology classification criteria for systemic sclerosis

Improving the sensitivity of the American College of Rheumatology classification criteria for systemic sclerosis. Hudson M, Taillefer S, Steele R. et al (Scleroderma Research Group). Clin Exp Rheumatol 2007; 25: 754-757

The objective of the present study was to determine whether the addition of information concerning nailfold capillary abnormalities using a dermatoscope and identification of visible telangiectasias, at areas exposed to sun, could improve the sensitivity of the current American College of Rheumatology (ACR) criteria for the diagnosis of limited systemic sclerosis.

They included data concerning 101 patients, with a majority of women having a mean age of 59. Of these only 67% met the ACR classification criteria. The analysis was performed only in patients with skin involvement on distal to metacarpophalangeal joints. Nailfold abnormalities were defined as the presence or absence of any dilated loops (enlarged capillary loops, 4 to 6-fold the normal size), giant capillary loops (> 10 fold the normal size) and / or avascular areas at the nailfold of the 3rd and 4th fingertips of each hand, and were recorded using a Dermlite® DL 100 dermatoscope. In addition mat-like telangiectasias were recorded excluding those in normal sun exposed areas. With this information sensitivity improved to 99%. The authors emphasize the role of nailfold capillary analysis with a simple dermatoscope as a way to improve the sensitivity of ACR criteria for limited systemic sclerosis.

COMMENTARY O. CORREIA

This work is another interesting paper that emphasizes the importance of dermoscopy, a technique very familiar to dermatologists, as a way to early detection of vascular abnormalities of the nailfold. Different patterns can be seen such as, enlarged capillary loops, microhaemorrhages and loss of capillaries (Fig 1 and Fig 2). In our practice we used computerized digital dermatoscope (Molemax ®) as a way to store and follow dermatoscopic vascular alterations of the nailfold. With this approach we improve the sharpness of the diagnosis of limited scleroderma. Recently (Sechi ME et al. Reumatismo 2008) it was suggested that capillaroscopic analysis should be performed twice a year in presence of primary Raynaud's phenomenon, in order to detect at an early stage the transition to secondary Raynaud's disease in patients showing at the beginning a normal pattern or non-specific nailfold capillary abnormalities. However, we cannot talk about specificity since some similar nailfold capillary abnormalities can be seen in other auto-immune collagen tissue diseases like Sjögren syndrome, dermatomyositis, antiphospholipid syndrome or systemic lupus (Cortes S, Cutolo M. Acta Reumatol Port 2007). •

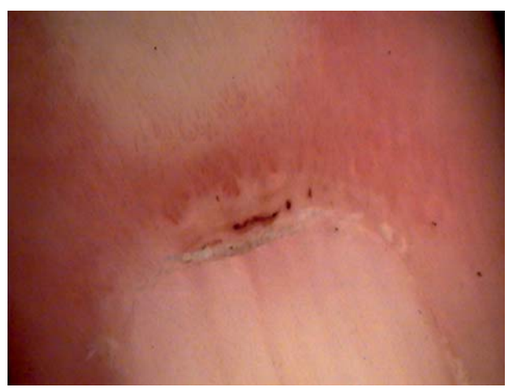


Fig 1 - Enlarged capillary loops and microhaemorrhages.

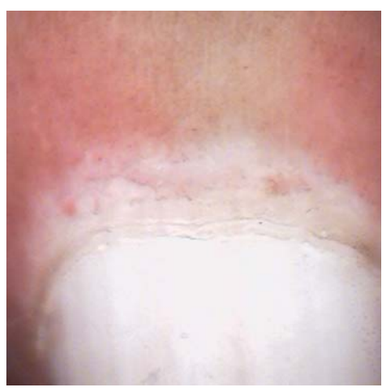


Fig 2 - Avascular areas with loss of capillaries.

Osvaldo CORREIA

The diagnostic accuracy of power Doppler ultrasonography for differentiating secondary from primary Raynaud's phenomenon in undifferentiated connective tissue disease

Kim SH, Kim HO, Jeong YG, Lee SI et al. The diagnostic accuracy of power Doppler ultrasonography for differentiating secondary from primary Raynaud's phenomenon in undifferentiated connective tissue disease. Clin Rheumatol 2008; 27: 783-786

This study was performed to evaluate the diagnostic accuracy of power Doppler ultrasonography (PDU) to differentiate secondary from primary Raynaud's phenomenon (RP), and also to compare PDU with nailfold capillaroscopy (NFC) for the assessment of microvascularity in undifferentiated connective tissue disease (UCTD) patients with RP. RP is an episodic peripheral vasospasm induced by cold or stress and it occurs in near 50% of patients with UCTD. Primary RP is related to a functional dysregulation of the autonomous nervous system without associated disorders. However secondary RP can be related to different collagen tissue diseases, including UCTD, and require further medical evaluation and surveillance. In this study of 14 UCTD patients with RP, 7 were suspected of secondary RP in NFC evaluation. Nevertheless the PDU, after a cold challenge, detected 12 patients with pattern III, which means that microvascularity always decreases before and after a cold challenge. The authors demonstrate a higher correct classification rate of 86% for PDU than NFC with 50% for the diagnosing of secondary RP in UCTD patients. These findings suggest that PDU is more useful in assessing microvascular abnormalities in UCTD patients with RP, and this is important because 15 to 20% of them will develop a well defined connective tissue disease.

COMMENTARY O. CORREIA

This paper demonstrates that power Doppler ultrasonography (PDU) is a valuable method to study patients with Raynaud's phenomenon (RP).

RP is characterized as an episodic digital ischemia associated with cold exposure, digital blanching, cyanosis, and rubor after rewarming (Fig 1 ; Fig 2). It can be related to different connective tissue diseases (CTD), obstructive arterial disease, neurogenic disorders, drugs, trauma, hematologic diseases and other causes.

Undifferentiated connective tissue disease (UCTD) includes patients with signs and symptoms suggestive of a CTD, but without the criteria of a defined CTD and it presents at least one non-organ-specific autoantibody. Although multiple studies have demonstrated that nailfold capillaroscopy (NFC) is a simple, cheap and non-invasive method used for the assessment of patients with RP and in the differential diagnosis of various CTD, the present work emphasizes the role of PDU as a method with higher sensitivity, for the diagnosis of secondary RP, at least in UCTD. •

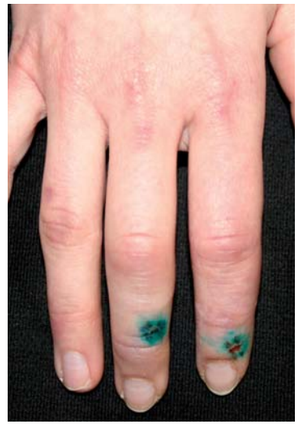


Fig 1 - Raynaud's phenomenon in a young girl with UCTD.

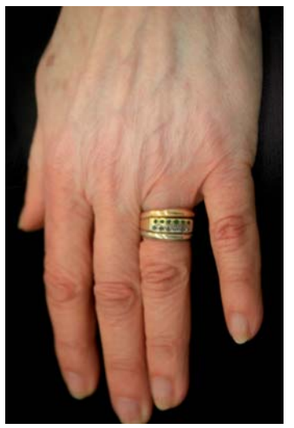


Fig 2- Raynaud's phenomenon in a old woman with Parkinson's disease treated with levodopa and trihexyphenidyl.

Long-term results of nail brace application in diabetic patients with ingrown nails

Erdogan FG, Erdogan G. Long-term results of nail brace application in diabetic patients with ingrown nails. Dermatol Surg 2008; 34: 84-97.

Ingrown nails are a common foot problem and are considered as a risk factor for diabetic foot disease. Early recognition and effective treatment are essential in these patients. In this study the authors proposed the use of a nail brace (orthonyx) in 21 non-insulin-dependent diabetic patients with ingrown toe nails. All patients were pain free and they continued their daily activities. Mean duration of nail brace application was nearly 4 months and the follow up evaluation for recurrence was close to two years. Fifteen of the 21 patients did not have any recurrences. Patients on whom the treatment did not work had been treated for 2.83 months compared with 4.6 months for nonrecurring cases. The recurrent patients prefer to use the brace again.

COMMENTARY O. CORREIA

Ingrown nail or onychocryptosis most commonly affect the great toenail. It is very frequent in children and teenagers. However it is considered a risk factor for diabetic patients. Many anatomic and behavioural factors, like hypertrophy of the lateral nail fold, use of narrow-toe shoes, improper trimming or plate malalignment contribute to ingrown nails. Conservative treatment includes soaking the foot in warm, soapy water, placing cotton under the ingrown nail edge and taping. This is usually sufficient for initial cases. The described nail brace application seems to be effective without alteration of daily activities for the initial cases even with pain, erythema and edema. However the authors don't include cases with suppuration or granulation tissue and they follow the patients monthly for 4 to 5 months. For advanced cases possible surgical approaches include electro radiofrequency, carbon dioxide laser for ablation of the nail matrix, partial nail matricectomy, but wedge resection with phenolization seems to be more effective, with a very low recurrence rate and minimal postoperative morbidity (Fig 1-5).

Osvaldo CORREIA

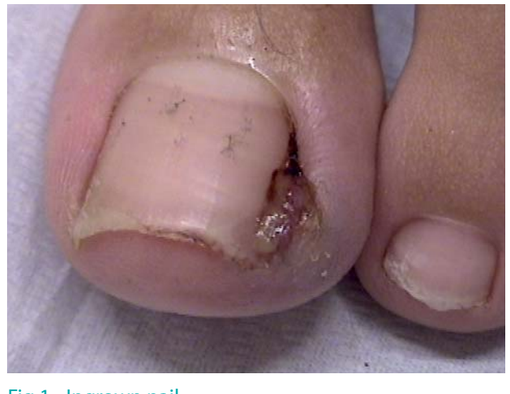


Fig 1- Ingrown nail.

Fig 2 - Partial nail avulsion.

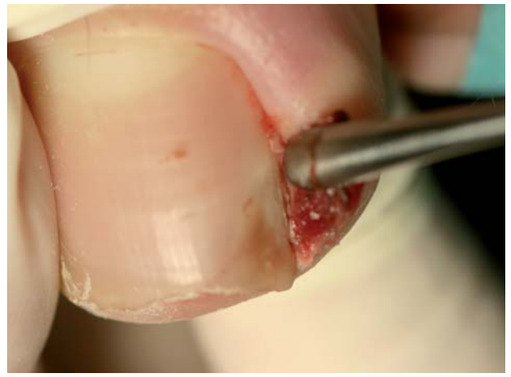


Fig 3 - Curettage of granulation tissue before phenolization.

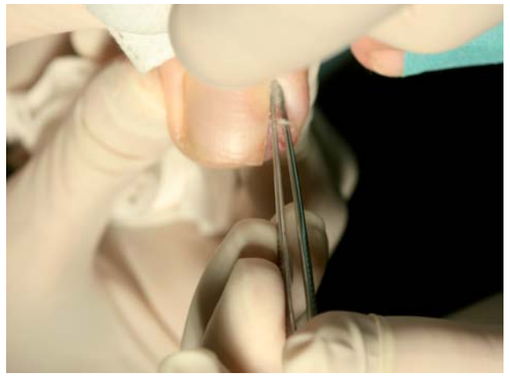


Fig 4 - Partial nail avulsion with phenolization.

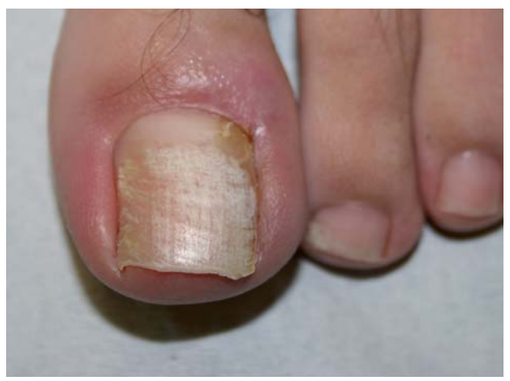


Fig 5 - One month after phenolization.

Osvaldo CORREIA

Mercury in human brain, blood, muscle and toenails in relation to exposure: an autopsy study

Björkman L, Lundekvam BF, Laegreid T. Mercury in human brain, blood, muscle and toenails in relation to exposure: an autopsy study. Environmental Health 2007, 6: 30

Most people are exposed to mercury (Hg) vapour via dental amalgam restorations, inorganic Hg 2+ (I-Hg) via food, methylmercury (MeHg) via fish and sea mammals and thimerosal in vaccines. Dental personnel constitute one of the largest groups with occupational exposure to elemental mercury. Exposure may also occur in the production of electrical devices.
Amalgam restorations continuously release elemental mercury vapour, which is inhaled and absorbed by the body and distributed to tissues, including the brain.
The aim of the present study was to study the relationship between inorganic and organic mercury in the brain and blood and other tissues in individuals without occupational exposure to inorganic mercury and to evaluate the use of the blood and toenails as biological indicator media for inorganic and organic mercury in the brain and other tissues.
Samples of blood, brain, pituitary, thyroid, abdominal muscle and toenails were collected during the autopsy of 30 died individuals. There was a significant correlation between MeHg in blood and the occipital cortex. Besides, total-Hg in toenails correlated with MeHg in both the blood and brain. I-Hg in both the blood and occipital cortex, as well as total-Hg in the pituitary and the thyroid were strongly associated with the number of dental amalgam surfaces at the time of death.
In conclusion, in a fish-eating population, intake of MeHg via the diet has a marked impact on the MeHg concentrations in the brain, while exposure to dental amalgam restorations increases the I-Hg concentrations in the brain. It is important to discriminate the different mercury types to evaluate the impact on Hg in the brain of various sources of exposure, namely, dental amalgam exposure, as well as fish consumption.

COMMENTARY O. CORREIA

This study provides information concerning the problem of dental amalgam as a source of I-Hg in both blood and brain. Although there is no evidence that exposure to dental amalgam is related to disease, it has been proved that amalgam exposure is associated with subclinical neurologic effects. It seems that cumulative amalgam exposure could be related to some neurological diseases, namely multiple sclerosis and Alzheimer's disease. Further studies are needed to clarify the role of dental amalgam (restoration size, surface area, duration of exposure) as well as different kinds of fish consumption on Hg concentrations in the brain, in order to definitively rule out any link with neurologic diseases. The fact that total-Hg in toenails is a useful biomarker for MeHg in brain is interesting. •

Sophie GOETTMANN

Onycholydysplasia of the fingers

Marti N, Villalon G, Lopez V, Martin JM, et al., Onychodysplasia of the fingers. Pediatr-Dermatol 2008; 25: 381-382.

The case of a 14-year-old girl with congenital fingernail abnormalities is reported.
She presents polyonychia (two lateral parts of the nail plate with central atrophia), of the two index fingers, micronychia of a third finger (Fig 1), abnormal shape of the lunula of the other third finger and short nail of the fifth fingers.
Radiologic changes include narrowing of the distal phalanx (Fig 2-3) and Y shape bifurcation on lateral views. It is a COIF (congenital onychodysplasia of the index fingers) also called Iso and Kikuchi syndrome.
Nail dystrophy is often located on the index fingers. It rarely occurs on the thumbs or the third fingers. Different kinds of nail dystrophies can be observed : irregular shape of the lunula, hemionychogryphosis, anonychia, micronychia, polyonychia, usually more severe on the radial side.
COIF diagnosis is based on five criteria: congenital nail dystrophy, index fingers concerned, different kinds of nail dystrophy, abnormalities of the underlying phalanx, possibly inherited disorder.
Etiology is unknown. It could be due to in utero local ischemic factors and/or autosomal transmission as seen in some families.

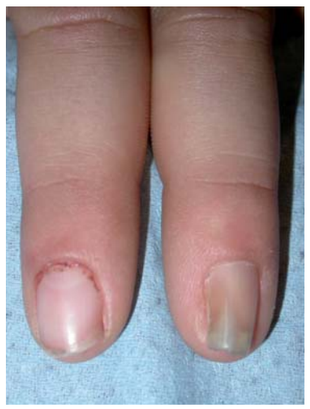


Fig 1 - Involvement of both index fingers in a child of 8 y.o. affected by COIF syndrome since birth. Pincer nail of the left index with onycholysis. Slight transverse plicature of opposite index.

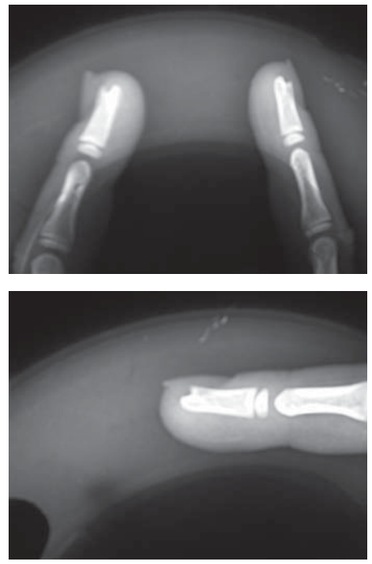


Fig 2 & 3 - Y-shaped pattern of the distal phalanx of the index and middle fingers.

COMMENTARY S. GOETTMANN

Congenital onychodysplasia of the fingers most often affects both index fingers. It is called Iso and Kikuchi or COIF syndrome (congenital onychodysplasia of the index fingers). Ischemic factors in utero may possibly be the cause, but dominant autosomic transmission has been reported in nine members of the same family.
Different kinds of nail dystrophies can be observed and mainly affect the radial side. They can be anonychia, micronychia, malalignment, hemionychogryphosis or an irregular shape of the lunula.
A frequent aspect is that of two portions of the nail separated by an atrophic area. The nail affection is generally asymptomatic and it is only an aesthetic problem.
Radiography of the profile brings to light a Y bifidity of the distal phalanx, which can also be observed without any accompanying nail abnormality.
The diagnosis is most often made in childhood when there is congenital nail dystrophy, which can go unnoticed due to the very small size of the nails and only becomes obvious with growth. A radiography should be carried out whenever there is unexplained nail dystrophy in a child.
From a therapeutic point of view, the anonychia and micronychia are, of course, permanent. Surgical malalignment treatment aiming to rectify the bone projection under the nail could be attempted in cases with pincher nails Correction of the bone anomaly might improve this kind of nail dysplasia. •

Sophie GOETTMANN

Hair and Fingernail gadolinium ICP-MS contents in an overdose case associated with nephrogenic systemic fibrosis

Saussereau E, Lacroix C, Cattaneo A, Mahieu L, Goulle JP. Hair and Fingernail gadolinium ICP-MS contents in an overdose case associated with nephrogenic systemic fibrosis. Forensic Sci Int 2008 ; 176 : 54-57.

Nephrogenic systemic fibrosis (NSF) is a multisystemic fibrosing disorder primarily affecting the skin and others organs of renal insufficiency patients, particularly patients on dialysis or approaching dialysis. It has appeared with the increased use of gadolinium (Gd)-enhanced magnetic resonance imaging (MRI). The exact cause of NSF has not been clearly established.
NSF could be caused by transmetallation, dissociation of the Gd liggand, resulting in free Gd3+ release, a highly toxic transition metal.

A 62- year-old hemodialysis patient underwent 13 contrast-enhanced MRI examinations. Gadodiamide and gadoterate meglumine were used 10 and 3 times respectively. Two weeks after the 8th MRI examination, the patient developed subacute swelling of distal parts of the extremities, leading to limb contractures and decreased mobility and pain. The skin became progressively thickened with a peau d'orange appearance. Three weeks after a new MR imaging examination, the patient presented a spreading of indurated areas, particularly on the arms and lower abdomen. Extensive fibrosis was observed on the extremities, progressing to brownish plaques. Pain, muscle restlessness, and lost of skin flexibility were associated. Skin biopsy confirmed the diagnosis.
Quantitative determinations of gadolinium were performed in blood, plasma, hair and nail. The first blood specimen was collected 3 months after the last MRI examination. Initially, the whole blood and plasma results were consistent with massive Gd amounts compared with healthy volunteers. Hair was collected 2 months after the last MRI, one-millimeter distal fingernail six months after the last MRI examination. Gd content in fingernail was 1130pg/mg while the median value in 130 healthy volunteers was 1pg/mg.

This case report is the first one associated with blood quantitative determination, in a hemodialysis patient being frequently exposed to gadodiamide. This is to our knowledge the only Gd-CM that has been associated with NSF. Blood and plasma Gd concentrations ranged from 18 to 300 times higher than those obtained in healthy subjects. In the fingernail specimen corresponding to the last MRI examination, Gd contents were 1000 times higher than those observed in 130 healthy volunteers. As regards hair Gd-contents, the results were more difficult to interpret. Others patients with NSF should have quantitative Gd determination in order to improve the toxicological interpretation.
This new NSF case underlines the major importance of performing pharmacokinetic studies in renal insufficiency patients requiring Gd-enhanced MRI examination. These studies should be developed particularly in patients immediately dialysed after Gd-based contrast media injection for MRI examination, in order to study the efficiency of prompt dialysis on Gadolinium elimination and in preventing NSF. Gd quantitative determination in fingernails could be of great interest for diagnosing patients developing NSF weeks or even months after the GD exposure.
A combination of factors, including altered kidney function and exposure to gadolinium-based contrast agents, may play a role in the development of this multi systemic fibrosing disorder.

COMMENTARY S. GOETTMANN

The accumulation of gadolinium in the nail allows us to make a retrospective etiological diagnostic of a nephrogenic systemic fibrosis due to the accumulation of by-products of gadolinium a long time after the injection.
Complementary studies may show a correlation between the evolution of blood and intra-ungual levels from the by-products of gadolinium over a length of time in both insufficient and non-insufficient renal patients, giving a better interpretation of the dosage in the patients' nails. The dosage of gadolinium by-products in the nail could be part of an etiological assessment of nephrogenic systemic fibrosis in patients at risk.
As the big toenail grows even more slowly, maybe we could lengthen the period over which the diagnosis is possible: up to twelve or even eighteen months after exposure. •

Sophie GOETTMANN

Terry's nails as a part of aging

Saraya T, Ariga M, Kurai D et al. Terry's nails as part of aging. Intern Med 2008; 47 : 567-568

A 89 year-old patient was referred because of dementia. Physical and laboratory findings were normal except for abnormalities of his fingernails. All the fingernails showed a thin distal pink transverse band , white nail bed and absence of the lunula - characteristic findings of Terry's nails (Fig 1).
Terry first reported a patient suffering hepatic cirrhosis with white nail.
This abnormality has been reported in association with chronic congestive heart failure, diabetes mellitus, hyperthyroidism, malnutrition and in the elderly. An underlying systemic disease should be looked for in younger patients.

COMMENTARY S. GOETTMANN

The white nails described by Terry correspond to an apparent leuconychia, that is to say a white colour linked to a paleness of the underlying nail bed, probably due to its modification. The lunula is no longer visible and often the colouring of the distal onychodermal band persists. This zone is situated proximal to the hyponychium and is of varied width. Sometimes, the width can be 50% of the length of the nail giving a clinical aspect similar to half and half nails. The red or the brown colours of this band are deeper due to the adjacent leuconychia.
This aspect has also been observed in distal circulatory disorders in patients with acrocyanosis.
Search for a systemic disease in younger patients is mandatory. •

Fig 1 - Terry's nail in an old patient with acrocyanosis. The nails are white and there is a distal erythematous crescent.

Sophie GOETTMANN

Nail dystrophy in primary systemic amyloidosis

Prat C. Nail dystrophy in primary systemic amyloidosis. J Eur Acad Dermatol Venereol. 2008 22 : 107-109.

A 70-year-old man presenting with anasarca had in his past medical history, a distal polyneuropathy of six years duration and a restrictive myocardiopathy of one year duration. Were diagnosed : proteinuria, high level of creatinine, a low level of haemoglobin, bilateral pleural effusion, semiblockage of the right branch. The diagnosis of systemic amyloidosis was suspected, but biopsy of the nerve and abdominal fat aspiration could not make the diagnosis. The patient had a three year history of nail dystrophy, with longitudinal striations and atrophy without cutaneous lesions. A nail biopsy was performed and showed pink homogeneous eosinophilic deposits in the papillary dermis of the matrix and around the vessels, stained positively with Congo red and showing apple-birefringence consistent with amyloid deposition. The diagnosis of primary systemic amyloidosis was made.

Symptoms of systemic amyloidosis depend on which organs are affected. They include fatigue, weight loss, paresthesias, oedema, dyspnea, petechiae, ecchymoses. The most characteristic skin signs are waxy papules, nodules caused by amyloid deposits in the dermis, macroglossia.
Nail changes include nail brittleness, crumbling, onycholysis, subungual thickening, striation, anonychia.

Biopsy of a cutaneous lesion has a high diagnostic value, as do rectal biopsy and abdominal fat aspiration (positive in 80 % of the patients).

There are ten reported cases of amyloidosis with onychodystrophie, including the present case. Five had multiple myeloma, two monoclonal gammapathy.
In five of these cases, nail dystrophy was the first sign. In one patient and in the present case, the nail dystrophy, present for more than three years, was the unique cutaneous sign.

The recognition of nail symptoms of systemic amyloidosis can lead to early diagnosis.

COMMENTARY S. GOETTMANN

Nail involvement can be the symptom leading to the diagnosis of systemic amyloidosis.
It typically looks like a matricial lichen with longitudinal striation, splinter haemorrhages or subungual petechiae, nail brittleness, fissures (Fig 1), and even nail atrophy. Onycholysis is rare. The diagnosis is rectified by matricial biopsy which instead of finding a band of inflammatory infiltrate finds typical amyloid deposits in the superficial dermis and around the vessels.
In elderly patients where lichen is progressing only slightly without treatment and a biopsy is not needed to confirm the diagnosis, nail involvement due to amyloidosis should be evoked. Thorough questioning and clinical examination should consequently be carried out, in order to look for other cutaneous, neurological and cardiac signs of systemic amyloidosis. •

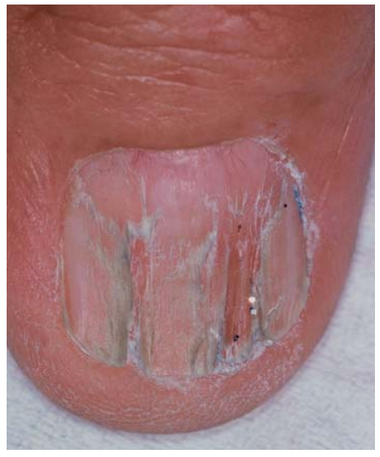


Fig 1 - Nail dystrophy with two wide longitudinal fissures (Courtesy of R. Baran).

Sophie GOETTMANN

Chemical method to enhance transungual transport and iontophoresis efficiency

Hao J, Smith KA, Li S.K. Chemical method to enhance transungual transport and iontophoresis efficiency. Int J Pharm 2008 ; 357 : 61-69.

Recently iontophoresis has been demonstrated as a promising method to enhance drug delivery through the human nail plate. The nail plate is extremely hard and impermeable. The water content of the nail imparts minimal flexibility and can influence permeability. Aside from hydrating the nail, keratolytic agents or enhancers are believed to assist in increasing transungual permeability. Pretreatment of the nails with chemicals (glycolic acid, urea, thioglycolic acid) is expected to enhance transungual permeation and iontophoretic transport efficiency.
In the present study, the effects of chemicals enhancers on passive and iontophoretic transport of model permeants across the fully hydrated nail plates and the barrier properties of the nail plates were investigated.
In vitro passive and iontophoretic transport experiments of model permeants mannitol, urea, and tetraethylammonium ion across the fully hydrated, enhancer-treated and untreated human nail plates, were performed in phosphate-buffered saline.
Passive and anodal iontophoretic transport at 0,1mA were studied. Nail water uptake experiments were conducted to determine the water content of the enhancer-treated nails.
Treatment of nails with thioglycolic acid at 0,5M enhanced passive and iontophoretic transungual transport of mannitol, urea, and tetraethylammonium. The effect on the nail plate was irreversible.
The study shows the possibility of using a chemical enhancer to reduce transport hindrance in the nail plate and thus enhance passive and iontophoretic transport.

COMMENTARY S. GOETTMANN

The therapeutic difficulty for suitable treatment in nail pathology is mainly due to the lack of accessibility to the affected pathological sites.
The mechanical barrier made up of the nail plate is an obstacle to the effectiveness of the treatment for the nail bed and even for the nail plate when it is invaded by fungi. Psoriasis of the nail bed without onycholysis is inaccessible to any reasonable treatment (corticoid injections in the nail bed are considered to be too painful). The treatment of onychomycosis, even if there has been considerable progress over the last two decades, remains long and still difficult to treat in certain situations. Therefore all research aiming to increase nail permeability and the transport of active substances through the nail plate opens up perspectives for the future and is necessary to finalize new treatment models. •

Sophie GOETTMANN

Nail degloving, a polyetiologic condition with three main patterns : a new syndrome.

Baran R, Perrin Ch. Nail degloving, a polyetiologic condition with three main patterns: a new syndrome. J Am Acad Dermatol 2008 ; 58 :1097-3083.

Nail degloving refers to partial or total avulsion of the nail and surrounding tissue.
Nail degloving encompasses three presentations with some overlap. The thimble-shaped nail shedding is a circumferential skin shedding including the nail plate. A partially sloughed-off-nail plate with surrounding tissues composes nail degloving. In the third presentation, shedding is restricted to the entire nail apparatus (matrix, nail bed, hyponychium, ventral part of the proximal nail fold) but spares the surrounding epidermis of the digit.
Aetiology of nail degloving may be traumatic, iatrogenic, gangrenous conditions or may appear with lichen.

Sustained dorsal injury sparing the nail matrix and phalanx and concentrated on the nail plate and nail bed need wound closure and replacement of the nail plate on the torn nail bed, sutured on the lateral nailfold and bandaged.
Iatrogenic diseases are a significant cause of nail degloving (Fig 1-3b). Toxic epidermal necrolysis provides the most typical cases, usually followed by regrowth of a normal nail. Gangrene of the nail apparatus may result from digital ischemia, in diabetes, embolic diseases, or vasculitis, and has also been associated with malignant neoplasms and disseminated intravascular coagulation.
A case report of nail degloving in a 50-year-old man from Senegal is reported. The patient had a whitish material at the base of the nail plates and a swollen proximal nailfold, sensitive to pressure. When progressive pressure was applied to the proximal nailfold, an advancing outward extrusion of the entire nail apparatus was observed, rigid enough to mimic a balloon fish completely opened at the rear.

Transverse and longitudinal sections were examined. Histologic changes suggested the diagnosis of hyperkeratotic and bullous lichen planus.
Histology of fragments of the proximal nailfold and the matrix showed a totally naked dermis fringed with a lymphocytic infiltrate presenting as a lichenoid band. The proximal ring of the round piece of tissue corresponded to an epithelial layer with keratohyaline granules almost totally lacking in dermis. Longitudinal samples corresponding to the nail bed and hyponychium, lacked dermis with a dense lymphocytic infiltrate at the dermo-epidermal interface.

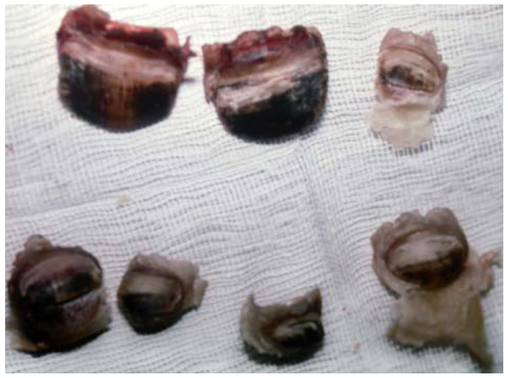
Two mains causes explain the process. The fragility of the dermoepidermal junction in lichen planus and in toxic epidermal necrolysis, is due to vacuolar alterations and/or cell death along the dermoepidermal interface with additional papillary edema in iatrogenic conditions. In cases of gangrene, the cleavage is produced by papillary edema and ischemic necrosis of the epithelium due to vascular thrombosis. Epithelium of the proximal portion of the ventral part of the proximal nail fold and of the proximal matrix keeps its attachment to the dermis and does not participate in the extrusion of the nail apparatus.
In lichen planus, the detachment involves all the middle and distal portions of the ventral part of the proximal nailfold and spares the back portion of the proximal nail fold and pulp epidermis.
In iatrogenic and gangrenous diseases, the cleavage extends to the epidermis of the back of the proximal nailfold and involves pulpar epidermis giving the aspect of a thimble shaped cavity.

COMMENTARY S. GOETTMANN

The authors report a case of a particularly spectacular bullous lichen planus responsible for "degloving" of the nail apparatus similar to the massive desquamation observed in toxiderma and distal ischaemic phenomena. They call this syndrome "Nail degloving" with three main clinical patterns.
The desquamation of the nail in the form of a finger of a glove takes on a clinical aspect which differs depending on the aetiology. This massive desquamation is due to a more of less extensive spread of the cleavage at the dermo-epidermal junction. In this reported case of bullous lichen planus, the epidermis of the dorsal side of the subungual fold of the matricial cul-de-sac and of the pulp remaining on the dermis does not participate in the desquamative phenomenon and the desquamated fragment is open on both sides.

During toxic epidermal necrosis and gangrene, the dorsal face of the subungual fold and the pulp are the most often involved, giving the impression of a real desquamation of the epidermis in a shape of a finger glove. The epidermis of the matricial cul-de-sac continues to adhere to the dermis.

The subsequent regeneration of the nail apparatus can be observed in spite of the very impressive images of the initial involvement. Occasionally nail regrowth is accompanied with a thinning of the nail, longitudinal striation or even onychoatropy. Anonychia may be seen. •



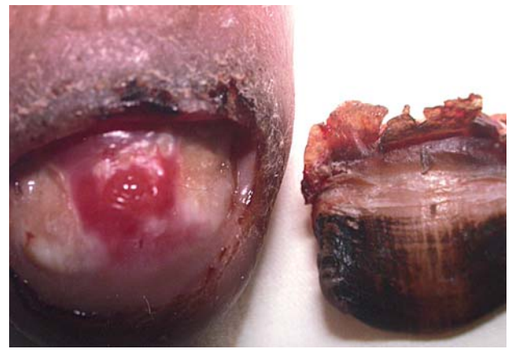
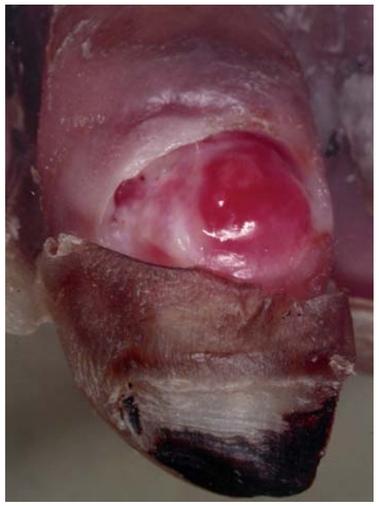


Fig 1 & 2 - Polydactylous degloving in a Lyell Syndrome.



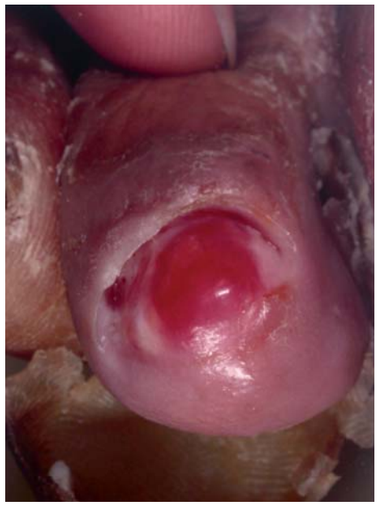


Fig 3a & 3 b -Appearance of the naked nail bed after degloving.

Eckart HANEKE

Transonychial water loss measurements require more standardisation before being useful for routine studies

Murdan S, Hinsu D, Guimier M. A few aspects of transonychial water loss (TOWL): Inter-individual, and intra-individual inter-finger, inter-hand and inter-day variabilities, and the influence of nail plate hydration, filing and varnish. Eur J Pharm Biopharm 2008;70:684-689

Whereas transepidermal water loss is a widely employed parameter in the pharmacology of human skin, transonychial water loss (TOWL) has rarely been measured and when it has, with very variable results. The reason for this has not yet been fully elucidated, but measurement of different nails, of different genders, of nails with variable thickness, with or without nail disease are considered to be likely culprits. However, also different measuring devices most probably account for these equivocal results. These authors used a specially designed measurement cap for the nail plate in order to get reproducible results and possibly identify variables that might be of use for treatment of different transungual delivery systems.

The authors used a condenser-chamber (Aquaflux, Biox, UK) with a nail adapter to measure the TOWL. Healthy finger and toenails of 3 people were measured. Each measurement was made over a period of 120 seconds and was repeated 3 to 10 times with an interval of 160 seconds in between. Before the measurements the individuals rested for a minimum of 40 minutes in the laboratory and avoided water contact. Ambient air humidity and temperature fluctuated between 26 - 47% and 18 - 25°, respectively. The finger or toe was placed on a flat surface for support and the probe was applied to the centre of the nail plate. The pressure, with which the probe was applied significantly influenced the TOWL low pressure giving the highest TOWL (38.4±0.8g/m2) and high pressure the lowest (32.9±0.8g/m2) values. Medium pressure, which gave a TOWL of (36.1±0.3g/m2) and had the lowest standard deviation, was therefore used for all measurements.

The measurements showed a broad interindividual range of TOWL: 28 - 75g/m2 for fingernails and 26 - 48g/m2 for toenails. This was greater than the intra-individual variability for both finger and toenails. These results suggest that comparisons between the TOWL of normal and diseased nails should be made between the same person and not between different individuals when the influence of disease on TOWL is to be studied.

Thinner nails were found to have a greater TOWL, but there must also be other factors influencing TOWL.

TOWL values are different in the same digits of the opposite hands though the difference is not large. This suggests that the opposite digits are not a good control.

Inter-day variability was found to be small, ranging from 7 to 11%. This could, in part, be explained by different ambient humidity.

Nail plates easily and rapidly absorb water from the environment, e.g. during hand washing. However, they also rapidly lose the absorbed water again. Water absorption increased with the time of water immersion until a saturation point was reached after approximately 5 minutes. Most of the absorbed water is lost again within 5 minutes after exposure even though this time is much longer.

The thickness ratio for the dorsal, intermediate and ventral nail plate layers is 3:5:2. Filing the nail surface greatly increases transungual drug flux. This study confirmed that this is also true for the TOWL, but the extent is very variable from one individual to another. The increase in TOWL is smaller with cosmetic nail surface filing than with a pharmaceutical one, the latter using coarser files.

Nail varnish decreases TOWL depending both on the varnish itself and on the number of coats though a second and third coat had only a very small effect compared to the first one. As a decreased TOWL is thought to enhance nail hydration and this, in turn, to enhance drug penetration, TOWL measurements might be used to compare nail lacquer preparations for their ability to reduce TOWL and increase drug penetration.

In summary, this study confirmed that there is a significant variability in TOWL in the paramenters measured.

COMMENTARY E. HANEKE

TOWL measurements are technically demanding and time consuming. The variability is significant. It hence appears that a lot more work has to be done until they become a routine tool for nail pharmacology and pathology. •

Eckart HANEKE

Surgery of duplicated thumb gives an aesthetically excellent nail

Iwasawa M, Noguchi M, Mishima Y, Fujita K. Long-term results of nail fusion plasty of the duplicated thumb. J Plast Reconstr Aesthet Surg 2008; 61: 1085-1089.

Duplicated thumb is a rather common congenital anomaly of the upper limb. Surgical correction is aimed at constructing a thumb with normal function and appearance. There are several different surgical approaches, of which Bilhaut's technique is apparently the most commonly one used although it has a tendency towards postoperative nail deformity. Watari's method uses the removed thumb as a fillet flap without a nail in order to prevent nail deformity.

The authors present their series of 8 cases of duplicated thumb with hypoplastic nails presenting less than 80% of the width of the non-affected side. The technique involves measurements to adjust for the width of the nail and the lunula with equal lengths of the lunulae of both segments. A small piece of cortical bone of the non-dominant thumb is preserved and the bone segments are not fixed. This allows the nail to grow with a natural curvature without interference from the bone. The suture technique is crucial: the first stitch has to approximate the distal edge of the lunula, the second one is at the base of the lunula and the third is at the edge of the proximal nail fold.

8-0 nylon sutures are used. The surgeries were performed at the age of 6 months and under general anaesthesia.

A scoring system was used to evaluate the postoperative nail shape: one point is given for each of the following:

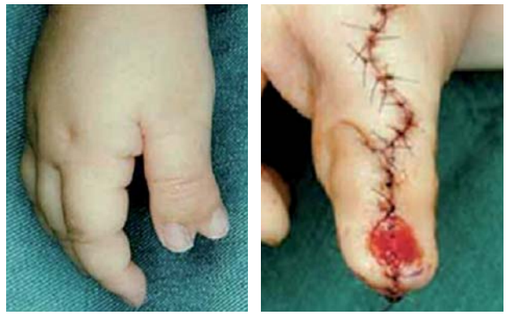
- nail and lunula having the same width as the non-affected thumb,
- no gap or ridge on the fused nail, and
- a natural looking appearance of the nail fold and lunula.

The follow-up period ranged from 5 to 19 years.

Six of the eight cases had excellent results with 3/3 points, one had an acceptable result (2/3) and one had a poor result (1/3) due to an uneven nail curvature and a gap in the nail plate. Two cases developed interphalangeal joint instability. Whereas most duplicated thumbs can be improved by augmentation with a soft tissue flap from the deleted thumb, the tendency towards postoperative nail deformity remains a problem with these techniques. In contrast, this study shows that the two segments from the hypoplastic thumbs retain their growth potential and can fuse provided they are properly sutured. Even though the bone fragments are not fixed together they spontaneously fuse within 2 to 3 months and the nail also fuses within this period. Surgery is aided by the use of a microscope. The ideal age for surgery is between 6 to 12 months as the angular deformity of the duplicated thumb increases with growth.

COMMENTARY E. HANEKE

A natural looking nail is an important part of a reconstructed thumb after duplication. This may be achieved by performing accurate measurements of the nail width and lunula, suturing the nail floor and matrix exactly together without tension and leaving bone from the non-dominant thumb floating, so that the nail can grow with a natural transverse curvature. The authors' photographs convincingly show good results. •



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Eckart HANEKE

Intraosseous location of a glomus tumour may be primary or secondary to previous surgery

Gombos Z, Fogt F, Zhang PJ. Intraosseous glomus tumor of the great toe: A case report with review of the literature. J Foot Ankle Surg 2008; 47: 299-301.

Glomus tumours are considered of being benign neoplastic proliferations of glomus cells. They characteristically occur in subungual locations and present with typical pain exacerbated by pressure and temperature change. Most glomus tumours are small not exceeding 10 mm in diameter. Commonly they cause a violaceous spot, from which a reddish band extends distally (Fig.1). About 10% present as primary multiple lesions.

The authors observed a previously healthy 21-year-old man who had consulted his family physician because of increasing pain in the left big toenail bed. There was no previous trauma to the toe. He was first treated by nail avulsion. A radiograph did not show any bone erosion. He underwent excisional biopsy of the tip of the toe with bone grafting. Pathology revealed signs of acute and chronic osteomyelitis. After 3 months, the toe hurt again as much as previously. MRI did not reveal any progression of bony abnormality or tumour. A second MRI was performed after another 3 months because of persisting complaints, and it revealed distal phalangeal osteolysis with involvement of the nailbed and periungual soft tissues. The toe was partially amputated. Healing was uneventful and no further therapy was necessary during the 12-month follow-up.

Histopathology of the 3 x 2.5 x 2 cm large surgical specimen showed an unencapsulated intraosseous mass. The tumour was composed of round-to-ovoid epithelioid cells surrounding capillary-sized vessels with a thin endothelium. The tumour cells were positive for smooth-muscle actin (SMA) and negative for desmin, cytokeratins, protein S 100, HMB45, CD34 and factor VIII. Thus the diagnosis of a benign glomus tumour was made.

Glomus tumours account for less than 2% of soft tissue tumours. Normal glomus bodies are located in the dermis of distal extremities, particularly subungually, and in the precoccygeal soft tissue as so-called glomus coccygeum. They are highly specialised innervated arteriovenous anastomoses that are involved in temperature regulation. The aetiology of glomus tumours remains unknown. Depending on the amount of the 3 components, (solitary) glomus tumours, glomangiomas and glomangiomyomas are differentiated. Glomus tumours make up for about 75%, glomangiomas for 20%. Extradigital localisation is rare, but has been repeatedly described. The first article on intraosseous glomus tumour of a distal phalanx was published in 1939 by Torre et al. Since then, 19 more cases have been published, of which 13 were located in the phalanges of a finger. About 1% of all glomus tumours are malignant. These tumours are usually large and deep-seated. The authors assume that the intraosseous localisation of the glomus tumour described was probably due to dislocation of the lesion during the first surgery with bone grafting.

COMMENTARY E. HANEKE

Glomus tumours are rare, but very characteristic lesions. They stand out by their highly typical symptoms and are rarely missed at surgery, provided the clinical diagnosis is correctly suggested. In our experience, amputation is not necessary.

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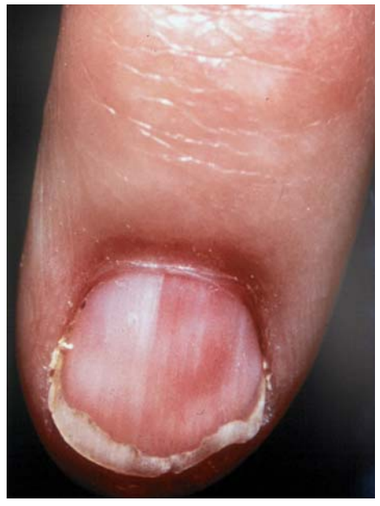

Fig 1 - Glomous tumour.

Eckart HANEKE

Onychomycoses are frequent in patients suffering from chronic venous insufficiency

Shemer A, Nathanson N, Kaplan B, Trau H. Toenail abnormalities and onychomycosis in chronic venous insufficiency of the legs: should we treat ? J Eur Acad Dermatol Venereol 2008; 22: 279-282

Onychomycosis is by far the most common nail disease world-wide. It has long been known that nail dystrophy as well as foot deformation render the toenails more susceptible to fungal infection. Chronic venous insufficiency (CVI) is common in adults and - like onychomycosis - increases in frequency with age. It is known that the toenails in patients with CVI are often dystrophic without any other underlying cause (Fig. 1-3b). Most CVI cases have a genetic background with many exacerbating factors, but deep vein thrombosis and valvular insufficiency of other causes are also occasionally found. CVI may be associated with lymphatic stasis and cause pachydermia and even papillomatosis of the skin that has to be considered in the differential diagnosis of several other diseases (Fig. 4).

Toenail alterations due to CVI very often resemble those of onychomycosis: the nails are thickened, discolored, sometimes onychogrypotic, or otherwise hyperplastic, and slow-growing. Once they get infected with pathogenic fungi (Figs 5, 6) they are extremely difficult to treat.

The authors studied 44 adult non-pregnant patients over the age of 18 who had mild to severe CVI. Patients that had been treated with a systemic antifungal drug within 9 months or with a topical antifungal one month prior to the study were excluded. All CVI patients with toenail deformation and proven onychomycosis (by smear and culture) were treated with itraconazole pulse therapy (200 mg twice daily for 1 week per month) for 4 months. The nail with the most severe involvement was chosen as the target nail for evaluation of the treatment result. Mycological, liver function tests and complete blood counts were performed during the treatment period and 5 to 6 months after the end of the medication. The clinical result was scored from the target nail as complete cure (100% clearing of the involved nail), marked improvement (>75% clearance), moderate improvement (50-74% improvement), mild improvement (25-50%) and no improvement (0-25%). Total cure included negative mycology.

Out of the 44 patients examined, 37 (84%) had nail changes. Twenty-eight of them (75%) had onychomycosis, mostly due to Trichophyton rubrum. All 28 patients had bilateral big toenail involvement. Twenty-four of the 28 patients were available for follow-up after 5-6 months after the last medication.

- Six patients (25%) had total cure.
- Two patients were markedly improved.
- One patient had mild clinical improvement.
- Fourteen had no improvement.

Of the 16 patients with mild or no improvement, 11 subjects still had fungi in cultures from their nails.

There were significant differences between the 6 completely cured and the 14 patients without improvement: the cured patients were significantly younger (44.7±2.24 vs. 55.8±6.3 years) and the duration of the CVI was significantly shorter (7.3±2.2 vs. 14.9±3.8 years). However, there was no difference in the duration of onychomycosis in the two groups.

Onychomycosis and CVI are very common conditions. Their prevalence increases with age. CVI can lead to toenail dystrophy, which is a well-known predisposing factor. In one study cited by the authors, 61% of the 36 patients had nail changes and onychomycosis was the cause in 59%. The present study documented a higher prevalence of onychomycosis in CVI patients. The cure rate achieved with itraconazole pulse therapy was only 25% in contrast to the 60 to 70% cure rate cited in the literature. This gives strong evidence that onychomycosis in CVI is even more difficult to cure than in otherwise healthy persons. It appears that the duration of the CVI as well as the age of the patients are also important factors for a successful treatment.

COMMENTARY E. HANEKE

It is common knowledge that pre-damaged nails are more susceptible to fungal infection and that these nails are more difficult to treat. However, a systematic study had not been conducted before. It remains to be seen whether the more potent drug terbinafine will give as disappointing a result as itraconazole.

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Eckart HANEKE

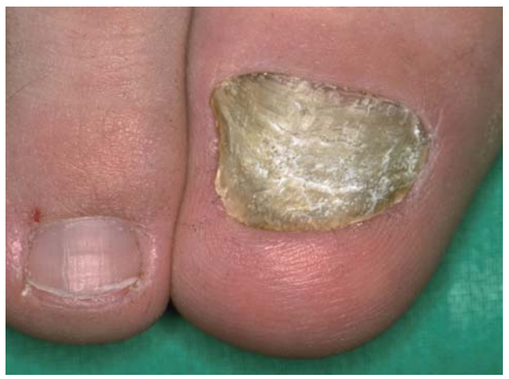


Fig 1 - Nail dystrophy in a 67-year-old patient with chronic venous insufficiency.

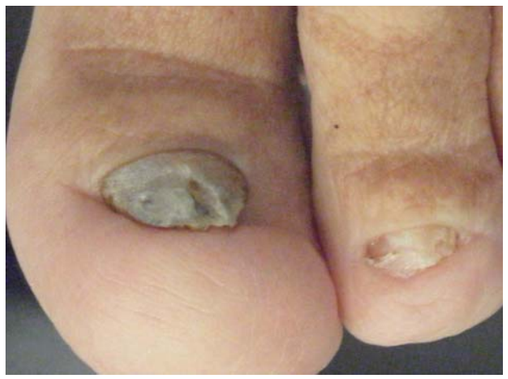
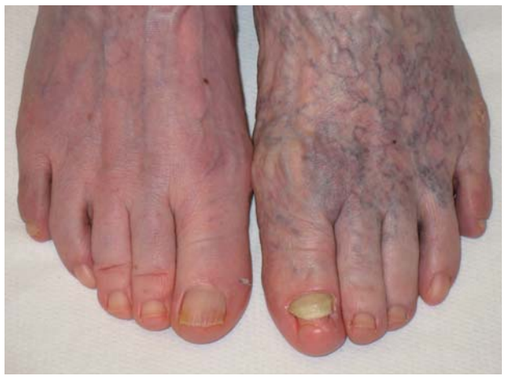


Fig 2 - Chronic venous insufficiency with marked oedema led to nail dystrophy.



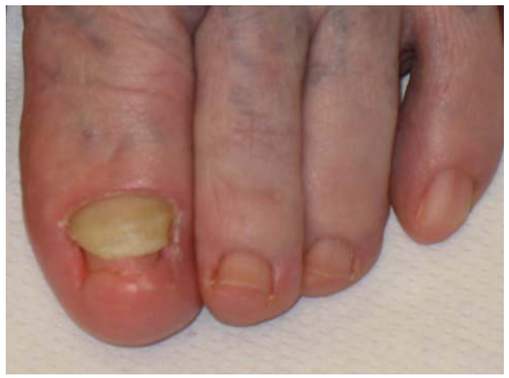


Fig 3 : Big toenail dystrophy of the left leg with chronic venous insufficiency.

Fig 3a - Comparison of healthy and varicose foot.

Fig 3b - Close-up of the big toe of the varicose foot.

Eckart HANEKE

Onychomycoses are frequent in patients suffering from chronic venous insufficiency

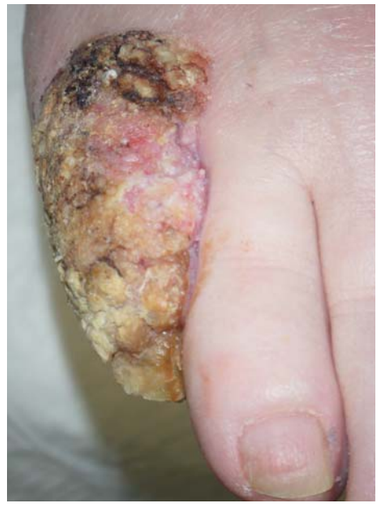


Fig 4 - Porocarcinoma mistaken for papillomatosis cutis in CVI for more than 5 years.

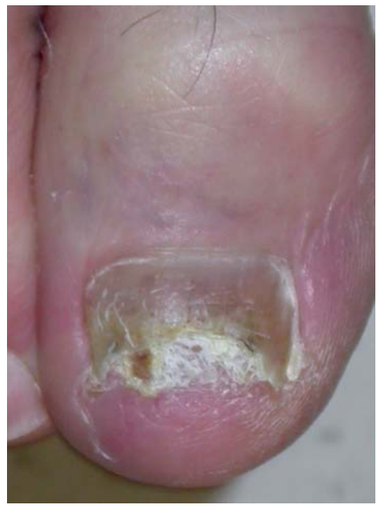


Fig 5 - Onychomycosis in a patient with CVI.

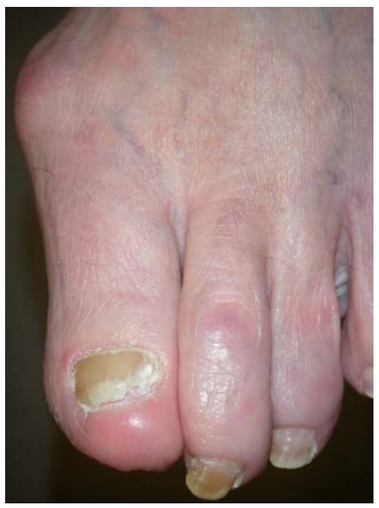


Fig 6 - Onychomycosis in a patient with CVI.

Eckart HANEKE

Simple counting of nailfold capillary density in suspected systemic sclerosis - 9 years' experience

Wildt M, Hesselstrand R, Åkesson A, Scheja A. Simple counting of nailfold capillary density in suspected systemic sclerosis - 9 years' experience. Scand J Rheumathol 2007; 36:452-457

Systemic sclerosis (generalised scleroderma) may be difficult to diagnose in its beginning. A number of laboratory tests and paraclinical investigations are used to confirm or rule out this serious condition, but particularly in the initial stages they often remain equivocal for a long period. As scleroderma shows capillary damage - like other autoimmune collagenoses - their investigation may help to establish the diagnosis and rule out Raynaud's phenomenon (RP).

Since 35 years, non-invasive nailfold capillary microscopy (NCM) has been a favourite tool in rheumatology for the diagnosis of scleroderma. Nail fold capillary abnormalities have been studied by qualitative, semi-quantitative and quantitative methods as a diagnostic and prognostic marker. Capillary density is believed to be the best discriminator between primary and secondary RP. In contrast to computer-based videocapillaroscopy, which is a time-consuming and expensive method, simple counting of the capillaries showed almost as good an agreement.

A total of 325 patients (270 women, 55 men) between 17 and 82 years of age were examined. Of them, 43 were re-assessed after 1, 2, 3, or 4 years. Eighty healthy control persons were also enrolled. NCM was performed by one investigator who had no information as to the clinical data. A stereo-zoom microscope was used at 20x magnification. Immersion oil was applied prior to measuring. The numbers of capillaries in the distal row were counted in 3 mm of the nail fold margin. It took about 10 min/patient to count the capillaries of 8 fingers - the thumbs were not counted. The capillary density (capillaries/mm) was defined for the ring finger as this is reported to be the best evaluable, and this was compared with the capillary density of the other fingers. In addition, diffusing capacity of the lung was studied, the pulmonary artery pressure estimated using Doppler cardiography, glomerular filtration rate determined, skin involvement assessed by a modified Rodnan score, and serum samples analyzed for antinuclear antibodies and anti-centromere antibodies.

Clinical evaluation showed that 214 patients fulfilled the American College of Rheumatology criteria for scleroderma. Of these, 176 had limited cutaneous systemic sclerosis (LCSSc) and 38 had diffuse cutaneous systemic sclerosis (DCSSc). Disease duration ranged from 0.5 to 32 years in the LCSSc and 05 to 9 years in the DCSSc groups, respectively. Twelve patients did not fulfil the ACR criteria in the beginning but did so after one year. Eleven patients had primary RP and five had morphea.

Capillary density was decreased in DCSSc (4.7), LCSSc (4.9), early SSc 4.7 and preSSc (5.9) compared with healthy persons (7.2). Patients with morphea and primary RP had normal capillary numbers (7.0). In five patients, the capillaries could not be counted. No significant difference was found between patients with limited or diffuse CSSc and preSSc. There was no association of capillary density with disease duration in the group of verified SSc. Of the 12 patients with the lowest capillary count, 3 developed pulmonary artery hypertension within a year.

The longitudinal examination in the 43 patients exhibited no differences in the time course.

Counting 8 fingers or only 2 - the ring fingers - demonstrated no difference.

Simple counting of nail fold capillaries of 2 fingers only is a simple and clinically valuable tool. It is the best discriminator between primary and secondary RP. It also allows to diagnose early SSc but cannot distinguish between limited and diffuse CSSc. As there was no further decrease of capillary density with time the reduction in capillary number appears to be an early event.

COMMENTARY E. HANEKE

Capillary microscopy in its now many variants is still a favourite tool for many rheumatologists. Its value for the diagnosis of scleroderma is well established. However, it is less reliable for the differential diagnosis of different autoimmune connective tissue diseases such as scleroderma, dermatomyositis, or lupus erythematosus even though many articles and textbooks claim that there are specific patterns for these diseases. This study compared the value of measurements of 8 fingers versus 2 fingers and concluded that they are of equal diagnostic importance. •

Eckart HANEKE

Both nail cosmetics as well as cosmetic procedures present considerable risks

Heymann WR. Nail cosmetics: Potential hazards. J Am Acad Dermatol 2007;57:1069-70

In this monthly dialogue of the "Blue Journal", the author discusses some of the potential hazards associated with the use or misuse of nail cosmetics.

In 2004, more than US$6 billion were spent on nail salon services alone. Potential hazards may be associated with the cosmetic materials themselves or related to the procedures used to beautify the nail.

The adverse events related to nail cosmetics may be due to various substances and procedures.

Allergic contact dermatitis is not rare eventually resulting in onychodystrophy, onycholysis, paronychia or so-called ectopic dermatitis due to volatile substances. Nail enamel, sculptured nails and preformed plastic tips as well as toluene sulfonamide formaldehyde resin, acrylates and ethylcyanoacrylate are the most common causes. Toxic or irritant dermatitis are seen with nail hardener solvents such as formaldehyde, but also with nail varnish remover including acetone and alcohol, the nail primer methacrylic acid for sculptured nails and the cuticle removers sodium and potassium hydroxide (Fig 1-3). •••

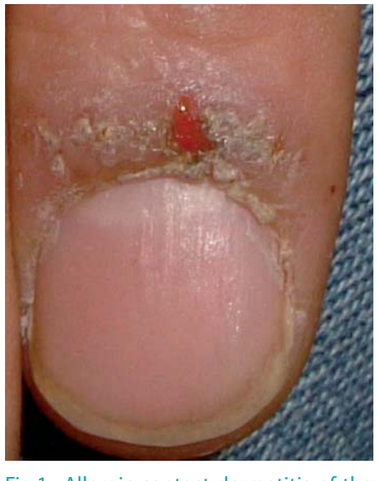


Fig 1 - Allergic contact dermatitis of the proximal nail fold.

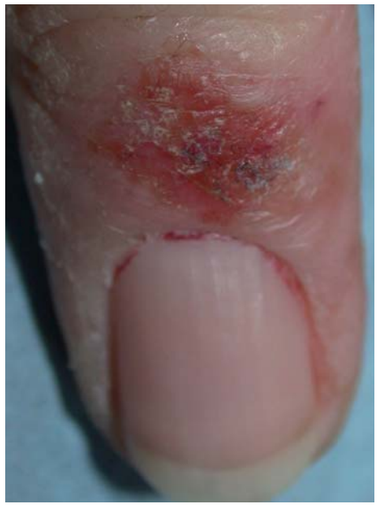


Fig 2 - Recurrent eczema of the proximal nail fold.

Fig 3 - Acute contact dermatitis of the nail bed from sculptured nails.

Eckart HANEKE

Eckart HANEKE

Both nail cosmetics as well as cosmetic procedures present considerable risks

Chronic manipulation, habitual tic, also causes severe nail damage (Fig 4). Nail varnish that contains ultraviolet protective substances, may stain the nails yellowish (Fig 5), but this is also sometimes seen after the use of very dark nail lacquers (Fig 6). Cosmetics and personal care products are the most common poisons in the paediatric population after analgesics and cleansing agents. They comprise nail products such as polish, polish removers, and artificial nail adhesives. A 15-month-old girl became comatose after sucking on a nail polish remover pad that contained gamma-butyrolactone. Nail technicians exposed to solvents and methacrylates were found to have cognitive and neurological symptoms. Respiratory symptoms such as wheezing and chest tightness, were also observed.

The influence of nail varnish on pulse oximeter measurements has repeatedly been estimated. Dark nail polish diminishes the reading by about 2% in a top-to-bottom position, but side-to-side positioning of the probe had virtually no influence.

Nail adornments are also a cause of concern in health care workers. Long fingernails may reduce grip and speed of manipulation (Fig 7), puncture gloves or may be caught in machinery, bedding or dressings. Artificial nails have a tendency to harbour bacteria that are difficult to eliminate with alcohol scrubs or soap (Fig 8). This increases the risk of transmitting infectious diseases (though there is no convincing study proving this assumption). The Association of Operating Nurses therefore recommends that surgical personnel keep their nails short and unadorned.

In a patient, nail adornments (Fig 9) may mask diagnostically important changes and clues. A nail discoloration potentially indicating a subungual melanoma may be missed under dark-brown nail lacquer.

COMMENTARY E. HANEKE

As the author states that he appreciates looking at beautiful and well cared for nails there is a risk inherent to all the different nail cosmetics and cosmetic procedures that should not be neglected. •

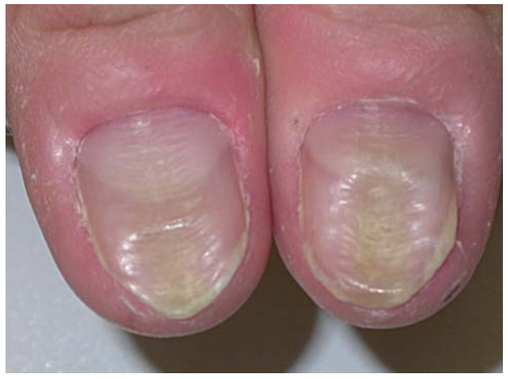


Fig 4 - Washboard nails from habitually pushing back the cuticles with a sharp instrument.

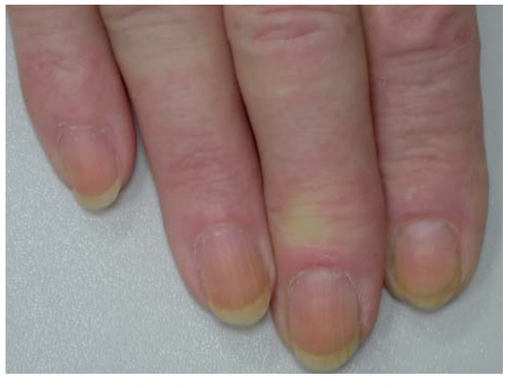


Fig 5 - Yellowish nail staining from a varnish containing an ultraviolet B-absorbing chemical.

Fig 6 - Exogenous nail staining from a dark nail lacquer.

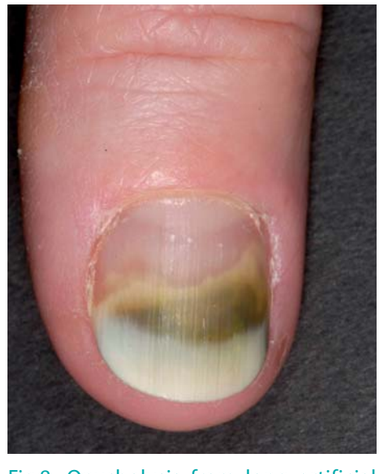


Fig 8 - Onycholysis from long artificial nails secondarily infected with *Pseudomonas aeruginosa.*

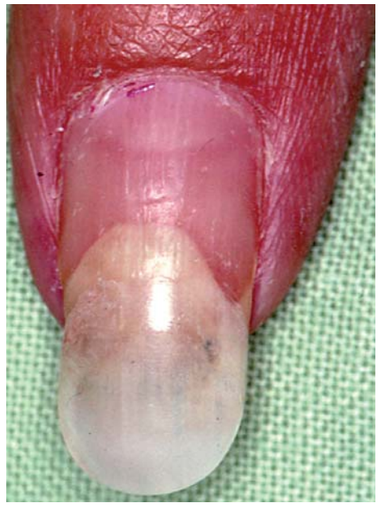


Fig 7 - Long stick-on nail.

Fig 9 - Nail adornment; note the small myxoid pseudocyst in the proximal nail fold.

Jose Maria MASCARO

HPV in epithelial malignant tumours of the nail apparatus

Shimizu A, Tamura A, Abe M, Motegi S, Nagai Y, Ishikawa O, Nakatani Y, Yamamoto H, Uezato H and Hoshino H. Detection of human papillomavirus type 56 in Bowen's disease involving the nail matrix. Br J Dermatol 2008; 158:1273-79.

The authors report five cases of Bowen's disease of the nail apparatus where clinical, virological and histological studies were made. Total DNAs extracted from cutaneous lesions were analysed using PCR for the presence of HPV DNA; the amplified products were subjected to DNA sequence analyses.

In situ hybridization of HPV DNA was also performed. In three out of five patients, HPV was detected by PCR amplification, and the subsequent study of PCR products showed the sequences of HPV type 56. A common clinical feature, longitudinal melanonychia, was found in all three HPV-positive patients. On the other hand the two HPV-negative patients presented with a convex nail deformity and a periungual ulcerative lesion. Two out of three HPV-positive patients had a silent point mutation in the L1 gene. In the third case, the nucleotide sequence was consistent with the consensus sequence of HPV 56. Sequence analyses of the E6 gene showed infection by different variants of HPV 56 in the three cases. In situ hybridization showed that viral genomes were located in keratinocyte nuclei. The study confirms that HPV 56 may be involved in the origin of Bowen's disease when affecting the nail matrix associated with clinical longitudinal melanonychia. •

Human Papillomavirus Type 73 in primary and recurrent periungual squamous cell carcinoma

Guldbakke KK, Brodsky J, Liang M, Schanbacher CF. Human Papillomavirus Type 73 in primary and recurrent periungual squamous cell carcinoma. .Dermatol Surg 2008; 34:407-413

The authors report the case of a man aged 32, with antecedent of mediastinal Hodgkin's lymphoma successfully treated with radiotherapy and MOPP 18 years previously, who developed two squamous cell carcinomas (SCC) at the lateral nail folds, one in the left finger and another in the right thumb. The tumours were removed by Mohs surgery and DNA extraction and PCR analysis permitted to identify the presence of HPV 73 (formerly named HPV MM9). The finger tumour recurred and was excised again with Mohs' technique. An incipient recurrence of the thumb lesion was successfully treated with a daily dose of Imiquimod for six weeks

Jose Maria MASCARO

COMMENTARY JM MASCARO

One of the most relevant mile-stones in oncology was the discovery of the association of some HPV types (high risk HPV) with epithelial malignancies, especially in transitional epithelia (squamocolumnar junctions) of anogenital areas. It is also known that some usually non oncogenic and non pathogenic HPV types are an associated co-factor of malignancies in peculiar immunogenetic conditions as in epidermodysplasia verruciformis.

Over the last decades an increasing number of papers and studies have been directed to elucidate the role of HPV in different types/locations of malignancies and the Nobel prize of Medicine 2008 was awarded to Harald zur Hausen, who was the first to confirm that cervix carcinoma was due to an HPV infection. Control of organ transplanted patients, that need continuous therapeutic immunosuppression, has also contributed to the knowledge of HPV induced lesions as these patients have an increased risk of cutaneous neoplasms.

HPV infection of the fingers and toes, and of course of the area of the nail apparatus, is very common and results in warts: a difficult to manage but usually benign and self-involuting condition. On the other hand malignant epithelial tumours of the nail bed, nail fold and neighbouring area are extremely infrequent.

For these reasons the findings of the papers of Shimizu et al1 and Guldbakke et al2 on the association of HPV 56 in Bowen's disease (BD) of the nail matrix and of HPV 73 in SCC of the nail fold are relevant. There is also an interesting clinical correlation found in HPV 56 associated BD: the presence of clinical longitudinal melanonychia (LM) signalling a matrix involvement. Even though LM is not a specific feature it appears interesting that only the 3 HPV 56 positive BD out of their 5 patients had that manifestation.

However, in spite of the new horizons opening up due to that all these studies, we still have more unsettled questions than answers. Which are the co-factors (initiators / promotors) that may play a role in HPV associated malignancies of the nail bed apparatus where so many HPV benign lesions occur but so few malignant ones. Do HPV associated malignancies of that area have a different aggressivity than those non HPV related ? Likely recurrences would be more common in HPV associated malignancies because of the persistence of HPV at the margins or farther, as occurs in viral warts. Paradoxally epithelial malignancies of the nail apparatus (mostly associated with the high-risk HPV 16) appear to be more related to genital carcinomas than non melanoma skin cancers of other locations, and some cases of association with carcinoma of the cervix in the same patient or genital cancer of the partner have been reported2 (HPV's 56 and 73 are also mostly found in genital cancer).

The conclusion is that it is extremely important to perform viral studies in as many benign and malignant lesions of the nail apparatus as possible and to meticulously note all associated antecedents of each patient. If this is done, we will maybe find the key to some of our present queries. •

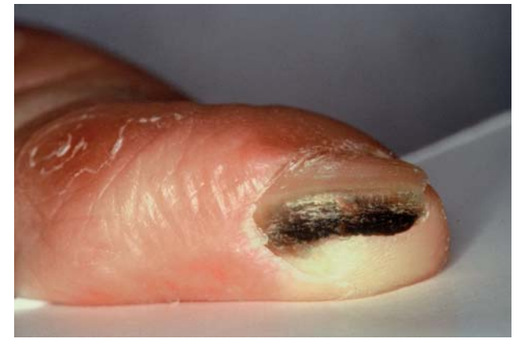


Fig 1 - Bowen's disease with longitudinal melanonychia (Courtesy of R. Baran).

Jose Maria MASCARO

OTC supplements and the nail

Sutter ME, Thomas JD, Brown J, Morgan B. Selenium toxicity. A case of Selenosis caused by a nutritional supplement. Ann Int Med 2008; 148: 970-971

The authors describe the clinical manifestations of a 55-year-old woman presenting selenium toxicity after ingesting a supplement with a high quantity of that metalloid. The patient presented a 6-week diarrhea followed by progressive diffuse symmetrical hair loss progressing from the scalp to the body (axillae, genitalia and extremities). She also suffered generalized muscle cramps, joint pain, fatigue, and difficulty with concentration. The patient had Mees lines on her fingernails. The serum taken from the patient had markedly elevated selenium levels. Analysis of the supplement showed nine times more selenium than claimed by the makers and for this reason the patient had received more than 400 times the daily recommended quantity of it. The patient's husband, who shared the supplement with his wife, had similar clinical and laboratory alterations even though less intense.

COMMENTARY JM MASCARO

In a normally balanced diet, natural sources provide all the needed elements for a healthy person. However, in the last decades, in many countries worldwide, there is a "fashion" to take diverse nutritional over-the-counter (OTC) supplements with the purpose of increase capacities, activities, energy, prevent diseases and decrease ageing effects. These supplements maybe vegetal extracts, vitamins, proteins and also very low dose metal or metalloid. In spite of the fact that health administration control registry of OTC products, they are not as regularly checked as prescription drugs are. Supplement consumption is not always danger free. On one had because uncontrolled uptake may accumulate some components and produce side effects (even healthy vitamins may accumulate and be at the origin of adverse effects). On the other hand these formulations may contain irregularly high amounts of some ingredients, much over the permitted concentration (as occurred in the present report).

Selenium is important in antioxidant enzymes and, as it has been shown and as this paper emphasizes, could be useful in treating / preventing coronary artery disease; because of this, it has been added to many OTC nutritional supplements.

The short paper of Sutter et al. is interesting for different reasons:

1- For dermatologists it is useful to know that excessive selenium intake may produce alteration of cutaneous appendages: hair loss (apparently by disruption of structural hair keratin proteins by selenium interpolating into disulfide bridges) and nail alterations presenting as Mees lines.
2- Mees lines are a non specific manifestation classically associated with arsenic poisoning and also reported in thallium intoxication. Selenosis may produce clinical manifestation similar to arsenic or metal toxicity (fatigue, irritability, paresthesia) and also Mees lines.

To conclude:

1- When exploring a patient, doctors must take into consideration not only the prescription drugs but also nutritional supplements, vegetal extracts and similar, because they may potentially produce side effects.
2- A more rigorous regulation of OTC supplements by the administration would be suitable.
3- Mees lines are a non specific manifestation and therefore screening to exclude a possible toxic origin appears to be needed. •

Jose Maria MASCARO

Primary adrenocortical insufficiency masquerading as Laugier–Hunziker syndrome

Yesudian P, Mendelsohn S, Rutter MK Primary adrenocortical insufficiency masquerading as Laugier-Hunziker syndrome. Int Dermatol 2008; 47: 596-598.

The authors report the case of a woman aged 36 who presented pigmented longitudinal bands in four fingernails over the last 17 years but which had evidently darkened during the last three years. She had also had lentigo-like hyperpigmented macules on the lower lip for two years. Peutz–Jeghers syndrome (PJS) and Laugier–Hunziker syndrome (LHS) were considered as a possible diagnosis. Three months later she was admitted with a five week history of severe weakness and lethargy, a two week history of postural dizziness, weight loss and dysmenorrhea. She had hypotension, tachycardia and at the examination pigmentation on knuckles was noted. Laboratory studies revealed hyponatremia, hyperkalemia, glucose 4.7 mmol/l and impaired renal function. Because of these manifestations a diagnosis of acute adrenocortical insufficiency (ACI) was made and consistently treated with insulin and intravenous (and later oral) corticosteroids. She progressively improved and the nail as well as the lower lip pigmentation intensity decreased.

Primary ACI (PACI) is a rare disorder caused by progressive destruction of the adrenal cortex, most commonly due to autoimmune disease. Clinical manifestations usually consist in weakness, hyperpigmentation (particularly in the skin creases and oral mucosa), weight loss and depression. When PACI is found in association with other autoimmune endocrine disorders, such as thyroid dysfunction or type 1 diabetes mellitus, the term polyglandular autoimmune syndrome type 2 is used. In PACI hyperpigmentation, particularly involving photo-exposed skin, normally more pigmented regions and mucosa, appears to be a consequence of hyperfunction of melanocytes from raised ACTH precursor levels. Nail pigmentation is however unusual. Abnormal hyperpigmentation decreases after treatment.

COMMENTARY JM MASCARO

This paper is interesting for different reasons:

a) - First of all it is useful to emphasize that in the diagnosis of persistent longitudinal **lineal hyperpigmented bands of the nails** (LHBN) it would also be important to consider the possibility of adrenocortical insufficiency (ACI) in spite of the fact that other aetiological causes are much more common (racial, drug induced, nevus and melanoma, etc).
b) - Association of LHBN and oral mucosal lentigo-like lesions is not only observed in Peutz–Jeghers and Laugier–Hunziker syndromes (Fig 1), but may occur in endocrine alterations, as in ACI.
c) - It is however important to note that the patient reported by Yesudian et al. had the LHBN fourteen years before presenting ACI and that the nails had darkened when adrenocortical insufficiency appeared; this probably means that a personal tendency to develop longitudinal nail hyperpigmentation also plays a role.
d) - In a patient with LHBN, especially when associated with lentiginous lesions of oral mucous membranes, the possibility of ACI must be taken into consideration.
e) - Physicians, as well as dermatologists, should be aware that the evaluation of nail and mucous membrane modifications (such as the longitudinal hyperpigmented bands of nails and lentigo-like lesions of the lower lip in the case reported by Yesudian el al.) could be of help in diagnosing some internal disorders (PJS, ACI are examples of it). •

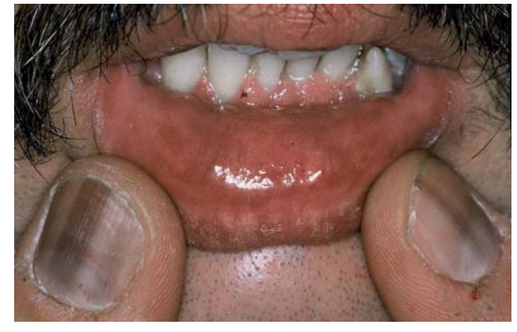


Fig 1 - Laugier-Hunziker syndrome (Courtesy of R. Baran, France).

Histological distinction between subungual lentigo and melanoma

Amin B, Nehal KS, Jungbluth AA, Zaidi B, Brady MS, Coit DC, Zhou Q, Busam KJ. Histologic distinction between subungual lentigo and melanoma. Am J Surg Pathol 2008; 32: 835-843.

Differentiation of benign subungual melanotic macules (SUMMs) and early melanoma in situ (M) is usually not easy. The study of Amin et al. was designed to verify if there are helpful microscopical parameters of potential diagnostic value. Biopsies and/or excision specimens of 35 pigmented nail lesions were studied (10 invasive M, 10 non invasive M, 15 SUMMs and 10 controls). Histological parameters taken into consideration were: density of melanocytes (DM), presence of multinucleated cells (PMC), pagetoid spread (PS), cytologic atypia (CA), inflammation (I) and distribution of melanin (DM). Density of melanocytes was quantified by the number of melanocytes (melanocyte count = MC) per 1mm stretch of subungual dermoepithelial junction.

In non invasive melanomas (NIM) an increase in density of intraepithelial melanocytes was found with median MC 58.9; focal confluency of cells was always noted; multinucleated cells in 8/10 cases; cytologic atypia from mild to severe was present but most (7/10) showed only moderate atypia; pagetoid spread was present in all; inflammation in 4/10. In invasive melanomas (IM) confluency of melanocytes was present in all cases, multinucleation in all cases but one, pagetoid spread was constant and usually florid; atypia was moderate; nests were present in 8/10 cases, MC mean was 102. In benign SUMMs a variable pigmentation with or without increase of number of melanocytes was noted and MC mean was 15.3 per 1 mm. stretch; no confluence or multinucleated melanocytes were found; no inflammation and absent or mild cytologic atypia was noted (only 1/15 showed moderately atypical melanocytes); pagetoid spread was found in 7/15 cases. There was no significative difference of pigment distribution in spite of the fact that strong diffuse pattern through the entire thickness of the matrix was more common in M.

As a conclusion of this study the authors comment that qualitative features associated with melanoma in situ are suggestive of the presence of confluent stretches of melanocytes, multinucleated pigmentary cells, "florid" pagetoid spread, inflammatory reaction and, particularly, density of melanocytes objectively evaluated by MC.

COMMENTARY JM MASCARO

Clinical distinction between a benign SUMM and an early in situ melanoma is often not easy. There are many subtle clinical clues which are helpful for the expert clinical dermatologist to differentiate benign from malignant lesions. Nevertheless in many cases a biopsy must be performed to have an accurate diagnosis. However pathological diagnosis is also a subjective procedure where the experience of the observer plays a crucial role in orienting the final opinion.

There is not a single microscopic feature useful to unquestionably classify a melanocytic proliferation as benign or early malignant. On the other hand the terms benign and malignant are related to the biological potential or behaviour of lesions. And this is, once more, a complex problem as we know the possibility of self regression of a malignant lesion and also the chance of malignant transformation of a previously benign proliferation.

It is for all these considerations that the paper of Amin et al, with a detailed microscopical study of 35 biopsy or excision specimens of benign and malignant subungual pigmentary lesions, is really interesting.

After reading it our previous thoughts remain unchanged. There are many qualitative features that, when concurrent, are strongly suggestive of melanoma: confluent stretches of solitary units of melanocytes, multinucleated melanocytes, inflammatory reaction, important (the authors say "florid") pagetoid spread of melanocytes. However these characteristics could also be found (uncommonly, and only mild or moderate, not severe) in benign proliferations. The quantitative finding of their study is the higher density of melanocytes (measured by melanocyte count = MC) in malignant lesions (median MC for invasive melanomas 102; in situ melanomas 58.9; benign SUMMs 15.3; controls 7.7).

I fully agree with the comment of the authors that MC appears to be an important element to take into consideration, but not as an absolute argument to define the lesion because, with their own written words "biopsies are snapshots of a process in time"; "biopsies may be subject to sampling error" and, finally, "relying on cell density of one sample alone without correlating it with the clinical context and other histologic features may give a false sense of security".

As a clinician and pathologist with more than fifty years experience I fully agree with them. A cluster of arguments is more valuable that a single attribute. And, when clinicians and pathologists deal with the possibility of a benign pigmented subungual lesion versus initial melanoma, experience and good sense are important virtues. •

Jose Maria MASCARO

Nail changes in Langerhans cell histiocytosis: a possible marker of multisystem disease

Mataix J, Betlloch I, Lucas Costa A, Pérez-Crespo M, Moscardó-Guilleme C.Nail changes in Langerhans cell histiocytosis: a possible marker of multisystemic disease. Pediatric Dermatol 2008; 25: 247-251.

The authors report a case of a 2 year and 7 months year-old girl with a six month history of asymptomatic alterations of her finger and toenails (onycholysis, subungual hyperkeratosis and haemorrhages) (Fig 1). In the previous two months she had had repeated episodes of acute median otitis which were treated with antibiotics and nonstereoidal anti-inflammatory drugs. She had no other antecedents and physical examination, as well as routine laboratory analysis, was negative. Nail lesions did not respond to diverse topical and systemic treatments (antibiotics and antifungal agents). Because of the persistence of median otitis a cranial CT scan was performed and osteolytic lesions of the right mastoid were found. Biopsies of the bone and the nail bed matrix (Fig 2) were taken showing an aspect of Langerhans cell histiocytosis (LCH). Some weeks later the patient developed cutaneous lesions on the trunk and face that microscopically also showed a dense mononuclear infiltrate of the upper dermis with large eosinophilic cytoplasm and reniform nucleus, strongly positive for CD1a surface antigen and S-100 protein. Treated with vinblastine (6 mg/m2), oral prednisone (40 mg/m2/day) and local infiltration of corticosteroids at the mastoid, all lesions cleared in three months with disappearance of the osteolytic lesions; the nails also became almost normal and only a light onycholysis persisted.

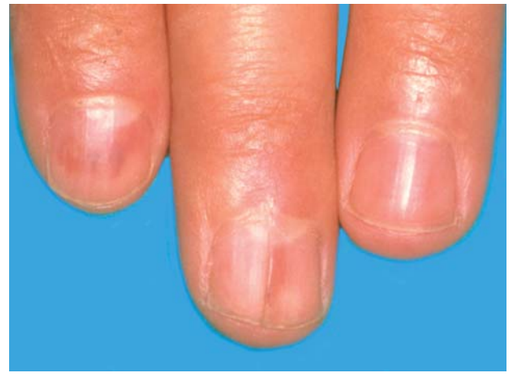


Fig 1 - Subungual haemorrhages.

In a review of the literature on the subject, the authors only found 14 previous cases (8 aged under 12) of LCH with nail involvement. All reported cases of LCH, as well as the patient of Mataix et al, had multisystemic involvement. However the case of these authors is the first where nail changes represented the initial manifestation of the disease, some months before any other symptom.

As a conclusion of their study and review of literature the authors suggest that nail involvement seems to be a marker of multisystemic extension of LCH. Cautiously they remark that there is not enough data to confirm if nail involvement in this disease is an independent prognostic factor of poor outcome as was suggested previously by Timpatanapong et al (1). Nail inspection is not always carefully made and therefore a longer series of patients would be needed to confirm this point. •••

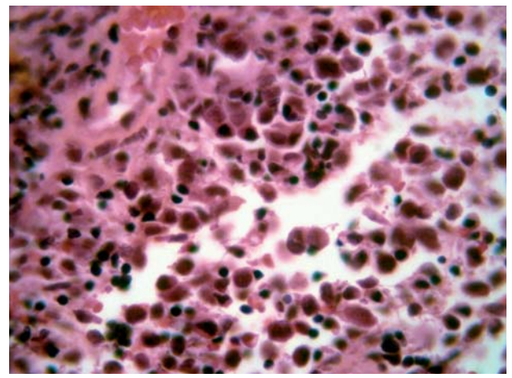


Fig 2 - Langerhans cell histiocytosis.

Nail changes in Langerhans cell histiocytosis: a possible marker of multisystem disease

COMMENTARY JM MASCARO

The paper of Mataix et al. is really interesting both for the accurate study of the reported patient and for the complete literature review. For those interested in nail pathology there are some points to comment:

1- Nail examination is important in all dermatologic and internal medicine patients. Often apparently minor changes of nails are not noted or taken into consideration by the doctor / dermatologist. Mataix et al comment that Valdivieso and Bueno (2) have suggested that probably nail changes are probably underdiagnosed in LCH because, when not really severe, they could be erroneously attributed to a biting habit (2).

2- Nail changes in LCH are variable: subungual hyperkeratosis, pustules or erosions, purpuric striae, onycholysis, longitudinal grooving, paronychia-like inflammatory changes of periungual tissues etc. In the limited number of cases where a biopsy was performed, infiltration by LCH mononuclear cells was found. Moreover the treatment of LCH has been shown to improve nail alterations. Therefore it appears that in most cases nail alterations in LCH would be due to specific infiltration by neoplastic LC.

3- Nail biopsy is rarely performed. Only 5 out of the15 patients with LCH and nail alterations mentioned in this paper (the 14 previously reported and the case of Mataix et al.) underwent histological study of the nail region. In the case reported by the authors nail lesions were present 6 months before any other manifestations; maybe a biopsy would permit a more initial diagnosis. Of course in an apparently healthy child we can understand the delay before performing an invasive, even minimal, procedure.

4- Quite often any persistent nail alteration is treated by topical and systemic antibiotics or even more commonly by antifungal agents. The rules for an accurate diagnosis of a microbial or fungal infection of nails are:
   a) confirm the infection by demonstration of the causal agent (direct exam, culture, etc)
   b) confirm that nail alterations are due to the agent found (pathogenicity of the finding) and that it is not a secondary non-causal element.

Of course this is not always easy and needs expertise, but I am weary because for years I have seen so many psoriatic or dystrophic nails treated for a long time with systemic antifungal agents in my daily practice. The primary diagnosis for any nail alteration from non specialised doctors or those who give advice, is usually onychomycosis and in most cases it is not right.

COMMENTARY R. BARAN

We are sad to say that we felt the same helplessness as JM Mascaro when faced with a diagnosis of onychomycosis which is rarely confirmed biologically: a risk for the patient and an abyss for the National Health Service. •

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(2) Valdivieso M, Bueno C: Langerhans cell histiocytosis. Actas Dermo Sif 2005; 96: 275-284.
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Jose Maria MASCARO

Immune privilege and the skin

Ito T, Meyer KC, Ito N, Paus R. In Nckoloff BJ, Nestle FO. Immune privilege and the skin. Dermatologic Immunity. Curr Dir Autoimmun 2008; 10: 27-52.

The concept of immune privilege (IP) is derived from the acceptance of allogeneic tumor implants in defined organs or tissues, such as the eye and the brain. The term was initially coined in relation to survival transplants in these sites as in corneal allograft. Therefore IP would serve to illustrate that a given tissue that hosts an allotransplant, awards the transplanted cells a relative protection from rejection by the immune system of the host.
Later the concept of IP was also extended to tissue areas where local establishment of an immunotolerance plays a biologic function, as in the fetomaternal placentar unit, were IP is crucial to avoid fetal rejection.
At the present time IP has become associated with a limited number of anatomical compartments that are protected by this phenomenon from excessive inflammatory activity. It takes place in the anterior chamber of the eye, the testis, the central nervous system behind the blood barrier and the fetal trophoblast; in animals it happens in the hamster's cheek pouch. In relation to the skin and its appendages, IP also plays a role in the epithelium of the anagenic hair follicle (HF) and in the proximal nail matrix (NM).
Both HF and NM are characterised by a low or absent expression of major histocompatibility complex class Ia antigens, as well as local production of potent immunosuppressive agents, dysfunction of antigen-presenting cells and inhibition of natural killer cell activities. In HF it appear that IP is only present in the anagen stage On the other hand, in the nail IP is continuously maintained in the proximal matrix because there is no cyclic activity.
It is important to note that the nail apparatus is immunologically non homogeneous. HLA-A/HLA-B/HLA-C expression is prominently downregulated in both keratinocytes and melanocytes of the proximal nail matrix (PNM) compared to other nail epithelium areas. PNM has also moderate HLA-G immunoreactivity (IR) and strong IR for locally generated immunosuppressants, as TGF-beta1, alpha-MSH and ACTH as well as macrophage migration-inhibitory factor, as strong inhibitor of NK cells activity. Near the PNM there are few CD1a +, CD4+ or CD8 + cells compared to nail fold and hyponychium. CD1a+ cells in and around the PNM show reduced MHC class II and CD209 expression indicating reduced antigen-presenting capacity. Therefore the nail immune system markedly differs from the one of the skin and has similarities to the anagenic HF immune pattern.

The stem cell rich nail apparatus appears often to be attacked by chronic inflammatory reactions: eczema, psoriasis, lichen planus, alopecia areata, lupus erythematosus, scleroderma and bullous immunodermatoses; this frequently results in severe and often irreversible alterations. On the other hand, due to its peculiar anatomic location, the nail is constantly exposed to environmental injuries that require a well-functioning immune response to prevent / defend itself from infections and other damaging agents. A balance of adequate and not unwanted immune response is needed to have protection and not autodestructive reaction.
A failure of nail IP, as well as in HF, probably plays a major role in the pathogenesis of alopecia areata (AA), one of the most common organ-specific autoimmune diseases. Therapeutic reinstatement of IP would result in an efficient approach for adequate treatment of AA.

COMMENTARY JM MASCARO

The notion of Immuno Privilege (IP) to explain why some definite anatomical areas of selected tissues/organs preserve allogeneic cells from rejection is really significant. It is easy to understand that this mechanism makes the tolerance of fœtal tissues by the mother possible; it is also indispensable for eye function (1) and, in case of collapse, may result in severe inflammatory reactions (it appears that, for example, autoimmune uveitis would probably be a consequence of ocular IP failure).

The interesting chapter written by Ito et al. (published in a volume on Dermatologic Immunity edited by Nickoloff and Nestle) shows how an apparently simple organ such as the nail apparatus (much less complex –no hormone receptors, no cyclic activity- than the hair follicle) is in fact heterogeneous in its structure and functions, and intended to balance the need of self protection from external aggressions and the necessity of balanced immune responses. Malfunction of nail IP would produce severe and excessive inflammation and persistent damage of the nail apparatus.

It is for this reason that therapeutic restitution of IP (with the present and future agents/methods of immunomodulation) may be extremely useful in chronic nail inflammatory diseases. Alopecia areata which, in the authors' words, is an "organ-specific disease" targeting hair and nail, will certainly benefit from the progress that may appear in the field of specific and focused IP reinstatement. •

References :
(1) Niederkorn JY: Immune privilege in the anterior chamber of the eye. Crit Rev Immunol 2002: 22: 13-46.

Bianca Maria PIRACCINI

Elevated nailfold plexus visibility aggregates in families and is associated with a specific negative symptom pattern in schizophrenia

Vuchetich JP, Liska JL, Dionisio DP, Stanwyck JJ, McGuire KA, Sponheim SR. Elevated nailfold plexus visibility aggregates in families and is associated with a specific negative symptom pattern in schizophrenia. Psychiatry Research 2008; 160: 30-7.

The capillaries of the proximal nail fold run parallel to the skin surface (Fig.1) and are not usually visible to the naked eye. The degree of nailfold plexus visibility (NPV) is a heritable trait. High NPV is present in 3-7% of the general population, and in 20 to 70% of schizophrenia patients - while not in patients with other psychiatric disorders. High NPV is in fact known to be a marker related to genetic risk for schizophrenia and greater NPV seems to correlate to higher levels of schizophrenia in the same family.

The aim of this study was to further investigate correlations of NPV and schizophrenia in patients affected by the disease and in their family members. The study included 24 schizophrenia patients and 28 of their adult first-degree relatives. NPV was assessed by trained raters blind to subject group membership and scored from 0 to 4 using a low power stereomicroscope with immersion oil. Patients were then examined for their schizophrenia clinical symptoms and their social and occupational functioning (employment status and total non-family social contacts). Frontal lobe functioning was assessed both in the schizophrenia patients and in the relative groups.

The results showed that:

- Incidence of high NPV in schizophrenia patients was 21%
- Schizophrenia patients with higher NPV had higher negative symptoms and had more pronounced deficits in social and occupational functioning;
- More that half of the relatives of high NPV schizophrenia patients had high NPV;
- Relatives of high NPV schizophrenia patients had a different pattern of schizotypal symptoms compared to relatives of low NPV schizophrenia patients.

The conclusions are that high NPV identifies the risk for a distinctive subtype of schizophrenia.

COMMENTARY BM PIRACCINI

The role of the nails as symptoms suggesting a systemic disease is well known to physicians, both dermatologists and non-dermatologists. Clubbing, Yellow Nail Syndrome, Muerchke's lines are in fact promptly recognized in clinical practice. It is therefore very interesting that a non-invasive examination of the proximal nail fold to assess visibility of dermal capillaries can be utilized by psychiatrists to assess schizophrenia patients. Further research in this field can help to recognize if subset of schizophrenia is heritable in association with high NPV. •

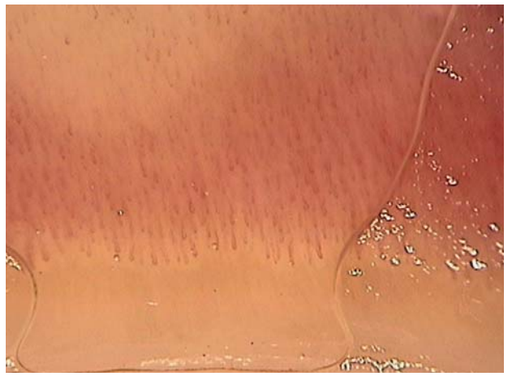

Fig 1 - Dermoscopic observation of the proximal nail fold with immersion oil permits to visualize superficial capillaries that typically run parallel to the skin's surface.

Bianca Maria PIRACCINI

Artificial nails: an orthotic answer to excessive scratching?

Freeman SR, Chen M. Artificial nails: an orthotic answer to excessive scratching ? Dermatol Nurs 2007; 19: 564, 572.

The article suggests that the application of artificial acrylic nails can be of benefit for patients affected by chronic pruritus with excessive skin scratching. The reason why application of artificial nails can help these patients is that skin trauma induced by artificial nails is lower than that of natural nails, due to the thickness of the distal part of acrylic nails (Fig.1). Minimizing skin trauma due to scratching would reduce the pruritic stimuli and break the itch-scratch cycle, in the same way that mittens worn by children with excessive scratching do. The conclusion is the suggestion to use artificial nails in combination with standard therapies for pruritus in patients with damaging scratching.

COMMENTARY BM PIRACCINI

Any suggestion of a new modality of blocking or covering the tool utilized to induce skin trauma in patients with auto-induced skin lesions is welcome, as it was for the introduction of cotton gloves in children with chronic itching, but I find it hard to believe that acrylic nails is a treatment to recommend to patients with excessive scratching. Most patients with chronic pruritus are old and many are men, and I do not think they will like the idea of artificial nails. Moreover, the procedure is not that simple since it requires specialized technicians, is quite expensive and the duration of artificial nails ranges from 1 to 2 months. The risk of acrylates allergy is well known and it may be higher in patients who constantly rub their artificial nails against the skin. •

Fig 1 - Artificial acrylic nails: note the thickness of the distal part (Courtesy of B. Richert).

Bianca Maria PIRACCINI

Subungual penetration of Dibutyl Phthalate in Human Fingernails

Jackson EM. Subungual penetration of Dibutyl Phthalate in Human Fingernails. Skin Pharmacol Physiol 2008; 21: 10-14.

Dibutyl phthalate (DBP) is an aromatic compound with several industrial utilizations, including that of plasticizer in nail polishes, a use that dates back more than 30 years. DBP is approved by the US Food and Drug Administration for use as a cosmetic ingredient, and its safety when applied to the skin has been assessed several times. Nevertheless, there are still some debates on its possible teratogenicity.

Percutaneous absorption or subungual penetration of BDP used in nail polishes cannot be assessed, since DBP in nail polishes becomes quickly entrapped in the hard coat that results from nail polish hardening. The study was then aimed to determine nail absorption of topically applied fluid DBP on human cadaveric fingernails. DBP at a fixed dose was applied on the top of the nail plate and its absorption was measured as its rate of appearance in the receptor solution that bathed the lower nail plate surface. Measurements were carried out by high-performance liquid chromatography/ultraviolet light every 24 hours over a period of 17 days. The results showed that DBP did not penetrate through human fingernails in any significant amount, the maximum 7-day exposure being of only 0.0008 ppm or less than 1 part per billion DBP. These results are even more valuable since they refer to the fluid DBP, and not to the trapped DBP, as it is in nail polishes.

COMMENTARY BM PIRACCINI

Safety assessments of products used in manufacturing processes, commercial products and consumer products are always welcome. Literature regarding safety of DBP gives both positive and negative results on his animal reproductive toxicity or teratogenicity. It is therefore valuable to know that DBP utilized in nail polishes is not systemically absorbed and it is safe. •

Clubbed fingers: radiological evaluation of the nail bed thickness

Moreira AL, Porto NS, Moreira JS, Ulbrich-Kulczynski JM, Irion KL. Clubbed fingers: radiological evaluation of the nail bed thickness. Clin Anat. 2008; 21: 314-8.

Clubbing is a well known important nail sign that is usually associated with respiratory, cardiac, or gastrointestinal diseases, even if it can also be idiopathic. Clubbing describes a bulbous deformation of the distal portion of the digit that has a drumstick appearance and an excessively curved nail (Fig. 1). The swollen proximal nail fold is soft and fluctuating, indicating increased deposition of soft tissue. The pathogenesis of clubbing is still not completely understood; possible mechanisms include increased vasodilation, secretion of growth factors from the lungs and disorders in the prostaglandin metabolism. Diagnosis of clubbing is clinical and may be corroborated

Bianca Maria PIRACCINI

Clubbed fingers: radiological evaluation of the nail bed thickness

by some measures, such as that of Lovibond's angle and the assessment of Schamroth's sign and the hyponychial angle. Lovibond's angle is the angle between the proximal nail fold and the nail plate, which in clubbing is greater than 180° (Fig.2). In clubbing, the rhombus that can normally be seen when the dorsal surfaces of the right and left second fingers are placed against each other - with the distal interphalangeal joints and distal aspect of the nails touching - disappears (Window or Schamroth's sign) (Fig.3). The hyponychial angle is formed by a line joining the dorsal surface of the distal interphalangeal joint with the dorsal surface of the proximal nail fold and a line joining the dorsal surface of the proximal nail fold with the hyponychium. A normal hyponychial angle is approximately 180°; it is > 192° in clubbing. The accuracy of these signs has, however, not been examined.

This study was performed in order to evaluate if simple radiography of clubbed and normal fingers in living patients permits to measure proximal nail fold thickness and helps to confirm clinical diagnosis of clubbing. Lateral X-ray projections of the right index fingers positioned directly over the film cassette were obtained from 85 patients with clubbing due to lung diseases and from 100 healthy controls with normal fingers. On each film, three independent observers using a 0.05 mm Vernier caliper traced lines to measure the nail bed thickness and the hyponychial angle. Diagnosis of clubbing was made when the hyponychial angle was greater then 192.0°, while diagnosis of absence of clubbing was made when the angle was less then 188.0°. The results are in accordance with what has been reported in histopathological studies and show statistically significant differences in the measures of the nail bed thickness and the hyponychial angle in the 2 groups, with values of nail bed thickness of 3.88 in clubbed fingers +/-0.55 mm versus 2.38 +/- 0.27 mm in normal fingers and values of the hyponychial angle of 198.8 +/- 5.2° (range 192.0-222.0°) versus 180.1+/-3.7° (range 170.0-188.0°) of normal fingers. Nail bed thickness was always above 3.00 mm in clubbing and always below 3.00 mm in normal fingers. No significant intra or interobserver differences were found in the measurements performed by the 3 investigators.

COMMENTARY BM PIRACCINI

The clinical diagnosis of nail clubbing is not always immediate, and in some cases it can be helpful to take an x-ray and measure the nail bed thickness and compare it to the normal value (below 3.00 mm). •

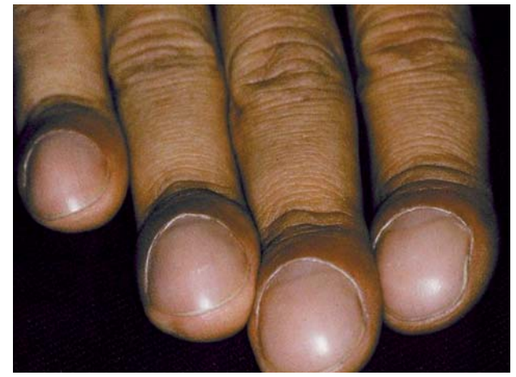

Fig 1 - Finger clubbing: the distal part of the digit is swollen, resembling a drumstick, and the nails have a watch-glass appearance.

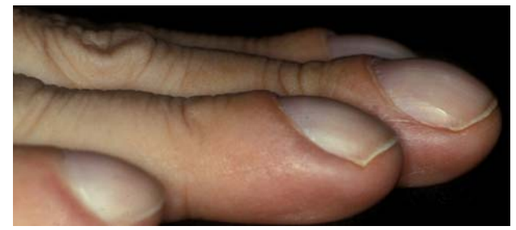

Fig 2 - In clubbing, the Lovibond's angle is greater than 180°.

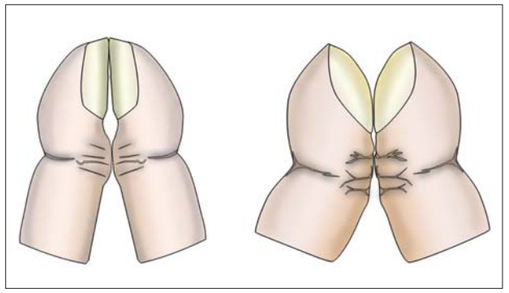

Fig 3 - Window sign: disappearance of the rhombus that forms when the dorsal surfaces of two normal fingers are placed against each other.

Bianca Maria PIRACCINI

Beau's lines and multiple periungueal pyogenic granulomas after long stay in an intensive care unit

Guhl G, Torrelo A, Hernández A, Zambrano A. Beau's lines and multiple periungueal pyogenic granulomas after long stay in an intensive care unit. Pediatr Dermatol 2008; 25: 278-9.

This article reports the case of a 9-year-old boy who suffered from severe respiratory distress and underwent orotracheal intubation and mechanical breathing for 16 days, associated with administration of several drugs. Two months after this episode, all his nails showed Beau's lines at the same level and 3 fingernails developed pyogenic granulomas of the proximal nail fold.

COMMENTARY BM PIRACCINI

The two nail symptoms described in the patient are different regarding clinical appearance, pathogenesis and treatment. Beau's lines are transverse grooves that run from side to side on the nail plate (Fig.1). They indicate a mild temporary insult to the proximal nail matrix that interferes with matrix keratinization. Their depth, length and width may vary, depending on type, severity and duration of the insult. They are usually deeper in the central portion of the nail plate and move distally with nail growth. The most common causes of Beau's lines involving several/all nails are high fever, viral infections and systemic drugs. In the case reported in the article, several causes may have induced Beau's lines of all digits, including the severe systemic stress, the physical debilitation and the multiple drugs that the young boy received. On the other hand, the development of multiple periungual pyogenic granulomas is more interesting and rare.

Pyogenic granuloma is a common benign vascular tumor whose exact cause is unknown, which frequently occurs in the lateral nail folds of ingrown toenails. Nail pyogenic granulomas may also arise from the proximal nail fold and on the nail bed under the nail plate, and may be due to different causes. Multiple periungual/subungual pyogenic granulomas are commonly due to systemic drugs, including retinoids, antiretrovirals (indinavir, efavirenz) (Fig.2), EGFR inhibitor and, more rarely, other molecules such as capecitabine (Fig. 3) and sirolimus. Other causes of pyogenic granulomas of several nails include nerve damage due to different situations, ranging from peripheral nerve damage as seen in the reflex sympathetic dystrophy or after cast immobilization, to nerve sufferance of Guillain-Barrè syndrome or tetraparesis. Periungual pyogenic granulomas regress after removal of the causes and can be treated by simple curettage or application of high potency topical steroids.

It is difficult to ascertain what caused the appearance of pyogenic granulomas of the proximal nail fold of several digits in the case reported in the article. Clinicians should be aware of this possible nail symptom and report it, in order to help to clarify its epidemiology and causes. •

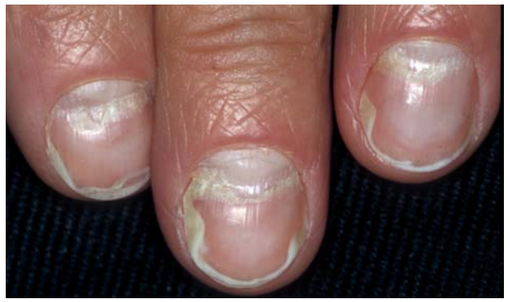

Fig 1 - Beau's lines: transverse depression of the nail plate.

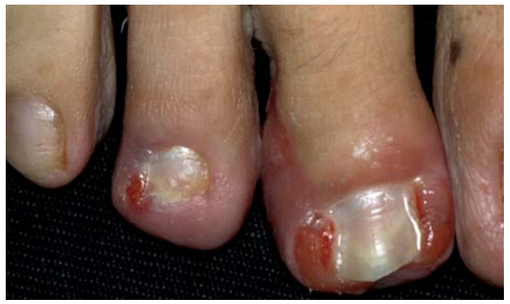

Fig 2 - Severe periungual pyogenic granulomas of two digits in a patient undergoing indinavir treatment.

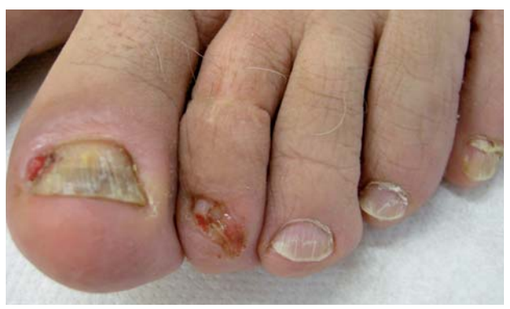

Fig 3 - Capecitabine-induced periungual and subungual pyogenic granulomas of several digits.

Bianca Maria PIRACCINI

Worn-down nail syndrome in a child

Patrizi A, Tabanelli M, Neri I, Pazzaglia M, Piraccini BM. Worn-down nail syndrome in a child. J Am Acad Dermatol 2008; 59: S45-6.

This article reports a new cause of triangular worn-down nails: scratching the nails against the hard desk at school by a child (the patient was an 8-year-old girl). The nail dystrophy involved all fingernails and consisted in a triangular-shaped area of nail thinning, with proximal apex, associated with pink erythema of the nail bed (Fig.1). Dilated nail bed capillaries and pinpoint hemorrhages were seen at nail bed dermoscopy.

Worn-down nail syndrome was first described in 1999 by Dr Baran (Br J Dermatol 1999; 140: 377), who called them "bidet nails", since they occurred in 3 women obsessed by genital hygiene who, constantly using the bidet, continuously scratched their nails against the bidet hard porcelain floor. The defect was triangular with its base lying at the free edge of the nail, where the thinning was maximal (Fig.2), and involved the middle three fingernails of the dominant hand (all the patients were right-handed).

Since then, several other cases of worn-down nails have been described: in some cases the nail trauma was professional (tailors who flattened the cloth using the back of the nails), in others it was due to the habit tic of rubbing the nails against the anterior surface of the thigh. In some patients the origin of the trauma that caused the triangular nail thinning was not found. A triangular-shaped nail thinning has also been observed in patients who excessively use the nail file in combination with the application of topical amorolfine nail lacquer: they have been called "lacquer nails" (J Eur Acad Dermatol Venereol 2006; 20: 1153-4) (Fig.3).

COMMENTARY BM PIRACCINI

It is interesting to notice that different kind of pathologies, such as overzealous genital hygiene, professional trauma and habit tic may all lead to the same onychodystrophy, consisting in a triangular-shaped consumption of the distal nail plate. Nail bed reddening may be more or less evident and nail plate dermoscopy can be useful for better detection. Worn-down nails are in my experience not rare, but probably unrecognized by physicians. A careful clinical examination and a detailed clinical history of the patient's professional and personal habits are mandatory for the diagnosis. The thinned nail plate progressively grows out with time and is replaced by a normal nail after cessation of the causative trauma. •

Fig 1 - Triangular worn-down nails in a child: triangular-shaped area of nail thinning with distal base, with nail bed erythema.

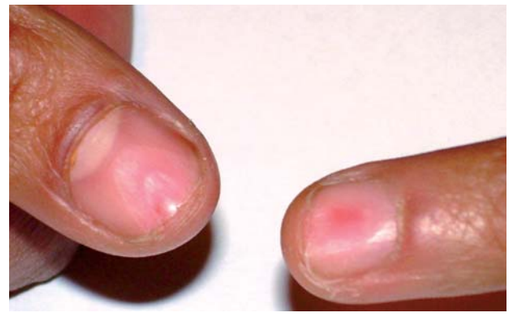

Fig 2 - Worn-down nails: thinning increases distally, nail bed erythema varies in the different nails.

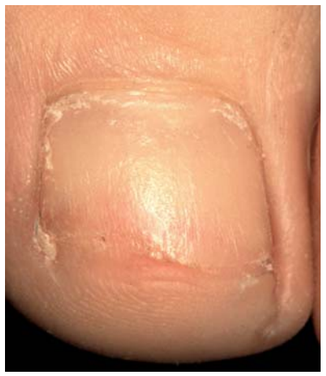

Fig 3 - Lacquer nails: triangular area of thinning of the distal nail due to excessive use of the nail file associated with the application of an antifungal nail lacquer.

Glomus tumour-induced longitudinal splitting of nail mimicking médian nail canaliform dystrophy

Verma SB. Glomus tumour-induced longitudinal splitting of nail mimicking median nail canaliform dystrophy. Indian J Dermatol Venereol Leprol 2008 ;74 :257-259

A 72-year-old Spanish missionary presented with an exquisitely painful thumb nail, that developed over a couple of years. Pain gradually became more intense. A longitudinal split in the nail grew during that period. There was no history of drug intake or any family history of similar affection. There was no history of repeated trauma or any habit tic. Examination revealed a longitudinal split beginning in the distal nail fold and extending all the way to the proximal nail fold. At the most proximal part of the nail, a small, almost indiscernible swelling, showed a little discoloration, without any discharge, bleeding or visible subungual mass. The "Love's test "was positive. A provisional diagnosis of longitudinal nail splitting mimicking median canaliform dystrophy due to an underlying glomus tumour was made. The tumour was excised by a plastic surgeon. Histopathological examination confirmed the diagnosis of a glomus tumour.

Median canaliform dystrophy of Heller (dystrophia mediana canaliformis, solenonychia, nevus striatus unguis) as the name suggests, is a dystrophic condition of the nail in which longitudinal splitting occurs. It is almost exclusively seen on thumbnails. In most cases, there is a fir-tree pattern, which was not seen in this case.

Repeated trauma, especially manipulating the central part of the cuticle, has been implicated in this disorder. However, it is not seen uniformly in all cases of median canaliform dystrophy of the nail. There can be waxing and waning or persistence of the lesion despite many years of scrupulous avoidance of any trauma. That questions the widely supported belief that the entity is secondary to chronic trauma. Isolated cases of its association with isotretinoin therapy and familial occurrence have been reported. Benign and malignant tumours like glomus tumours, myxoid cyst, papilloma, squamous cell carcinoma, malignant melanoma etc ... can have a subungual location and can cause nail dystrophy including longitudinal grooving and lifting of the nail plate from the bed.

Glomus tumour should always be kept in mind when facing a painful nail.

A glomus tumour-induced longitudinal splitting of the nail resembling a median canaliform deformity of the nail without the fir-tree pattern has been reported.

COMMENTARY B. RICHERT

This paper shows once more that median canaliform dystrophy remains an ignored and misunderstood entity.

It is true that this condition may present as a longitudinal superficial fissure, mainly located in the median part of the nail plate, that very rarely reaches the free edge. Classically, it is associated with discrete lateral feathery cracks evoking a fir-tree or a herringbone (Fig 1). The most proximal part of the lesion may exhibit some erythema. In most cases the lesion is painful.

Protection with occlusive dressings on a 24/7 basis during 6 months usually suffices to have the nail return to its normal shape, thus suggesting a traumatic origin. But recurrences are not rare. The existence of an enlarged lunula (Fig 1) acknowledges pressure on the proximal part of the nail - meaning trauma - even if denied by the patient.

It is also true that a large number of subungual lesions may be responsible for an elevation of the nail plate with overlying split: in this case the fissure reaches the free edge. Submatricial glomus tumour usually presents as a longitudinal erythronychia, with distal notching (Fig 2), extremely painful at its base. In some more severe cases, the most proximal part of the longitudinal erythronychia shows a little swelling (location of the glomus tumour) with subsequent overlying nail thinning. This is the clinical picture shown in this article. In some cases, the glomus tumour only manifests with intense pain without any clinical feature (Fig 3). Only MRI permits the diagnosis (Fig 4). Pain is the hallmark of glomus tumour. Exceptionally the tumour is painless and presents as a nodule of the soft tissues. Histology will make the diagnosis.

As differential diagnosis, one should think about onychopapilloma, a threadlike subungual tumour which appears in the distal matrix and give rise to a painless longitudinal red streak, with distal notching overlying the keratoma emerging under the free edge (Fig 5). A very small series of Bowen's disease presenting as painless longitudinal erythronychia have been reported.

This paper reveals the reviewer is not a nail specialist. It is for this reason that one discovers articles convinced of presenting an atypical form of glomus tumour, which is indeed very typical (Heller's dystrophy is never painful and its fissure never reaches the free edge) or that some median canaliform dytrophies attributed to isotretinoin are in fact elkonyxis, a proximal superfical fragility of the nail plate induced by retinoids (Fig 6). •

Bertrand RICHERT

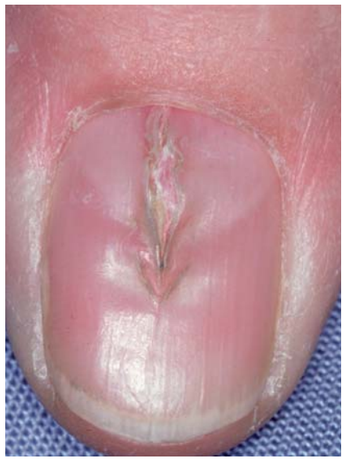

Fig 1 - Heller's dystrophy. Note that the fissure remains proximal and does not reach the free edge. Presence of a macrolunula acknowledges repeated trauma in the proximal region, even if denied by the patient.

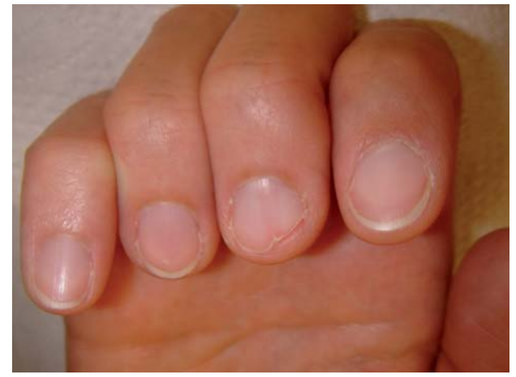

Fig 2 - Glomus tumour with classical presentation: longitudinal erythronychia with distal notching. Pain is the hallmark of the condition.

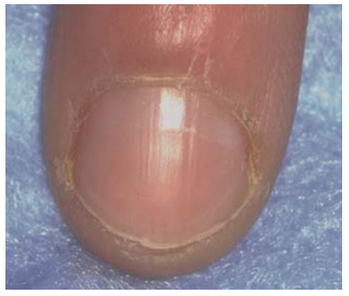

Fig 3 - Symptomatic but clinically invisible glomus tumour. The patient was orientated to the psychiatric department ... (Courtesy of J. André, Brussels, Belgium).

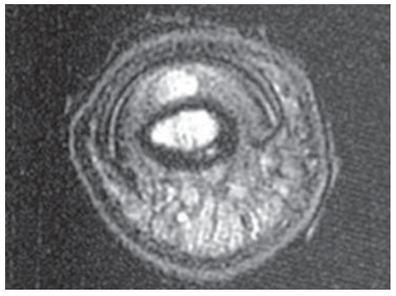

Fig 4 - MRI of the former patient: visualization of the glomus tumour in T2 weighted time. Histologic examination of the excision specimen confirmed glomus tumour.

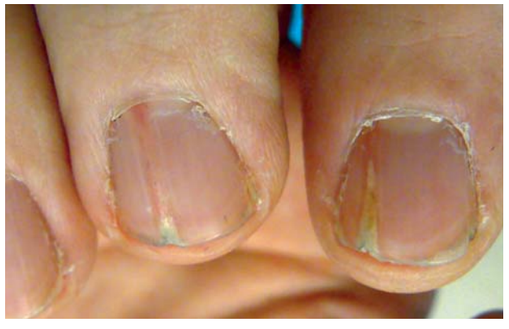

Fig 5 - Multiple onychopapilloma presenting as longitudinal erythronychia with more or less prominent distal fissuring.

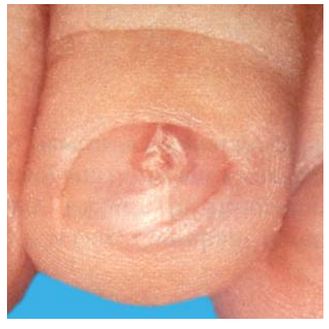

Fig 6 - Elkonyxis from retinoids intake (Courtesy of R. Baran, Cannes, France).

Bertrand RICHERT

Post traumatic amelanotic subungual melanoma

Ghariani N, Boussofara L, Kenani N et al. Post traumatic amelanotic subungual melanoma. Dermatol Online J 2008 ; 14(1): 13.

Subungual melanomas are rare, accounting for 2% to 3% of all cutaneous melanomas in the Caucasian population. The great majority of subungual melanomas (90%) occur on the thumb or the great toe. The role of preceding trauma in the pathogenesis of subungual melanoma has been suggested without being proven.

An 86-year-old man consulted for a reddish nodule on his right fourth finger. The lesion developped rapidly over a period of one month following an injury from nail clippers. Physical examination revealed a red, fleshy, friable nodule of one centimeter in diameter that bled easily.

Histological study showed a melanoma that was confirmed with immunostaining using HMB-45 and Melan-A.

There was no evidence of regional node involvement and screening for metastatic disease was negative. The patient underwent a complete amputation of his fourth finger. Eight months later, multiple lung and liver metastases were detected and the patient died shortly thereafter.

The differential diagnosis of amelanotic melanoma includes vascular tumors, especially pyogenic granuloma. Although presenting with a very similar feature, pyogenic granuloma is characterized by rapid growth compared to achromic melanoma that generally has a slow, painless evolution that may last for months or years. Although pyogenic granuloma was suspected, the biopsy revealed the correct diagnosis.

The notion of trauma preceding the appearance of a subungual melanoma has been reported in 23% to 24% of cases. Some researchers suggest a direct role of trauma in the pathogenesis of melanoma. Others object to this idea and believe that the trauma is just incidentally associated. Early biopsy of every nodular acral tumor is important. The direct role of trauma in the pathogenesis of subungual melanoma remains unclear.

COMMENTARY B. RICHERT

This clinical case confirms that one should remain extremely vigilant when dealing with a fleshy nodule located at the nail apparatus (Fig 1-5). It has to be excised "en bloc "immediately (and not biopsied as suggested by the authors) in order to allow proper diagnosis. Destructive procedures such as curettage, CO2 laser, dessiccation ... should not be performed as they do not allow histological examination.

What remains very surprising here is the rapid growth of the tumour in one month. But some tiny lesion might have been present for a long time and the trauma from the clipper may have boosted its proliferation ... and what about the notion of time in an 86 year old man ... •

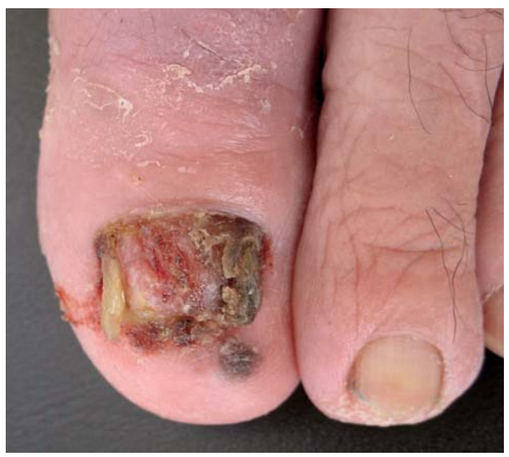

Fig 1 - Amelanotic melanoma revealed by the development of a distal pigmented macula after several years. Note the destruction of the nail apparatus. (Courtesy of M. Trakatelli, Greece).

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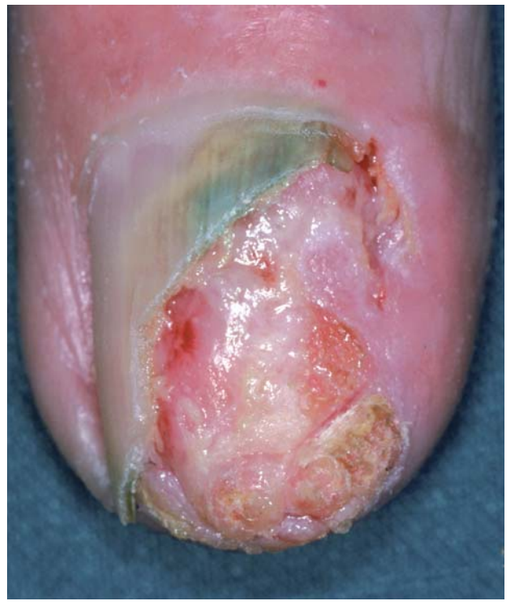

Fig 2 - Long standing subungual lesion. It presented with chloronychia (visible remnant at the most proximal part of the clipped nail), onycholysis and oozing. The clipping of the detached nail exposes the lesion. Biopsy showed a squamous cell carcinoma.

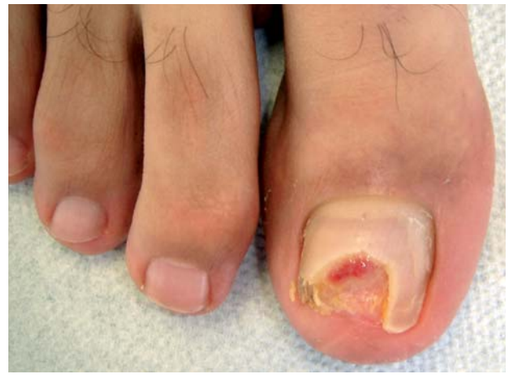

Fig 3 - This recent oozing proliferation pushed this young cardiologist to ask for advice from his dermatological friends. Questioning revealed that it developed after a prolonged walk with improper footwear. Histological examination of the excisional specimen showed a pyogenic granuloma resulting from friction.

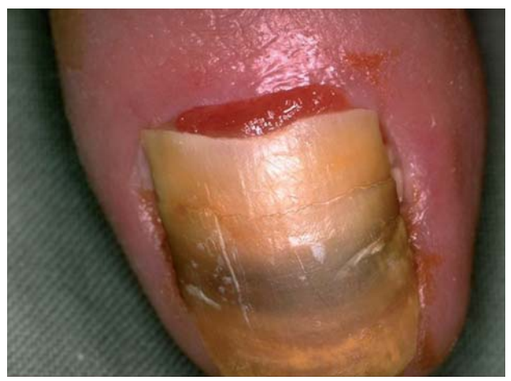

Fig 4 - Subungual fleshy nodule lifting the proximal part of the nail plate in a retronychia.

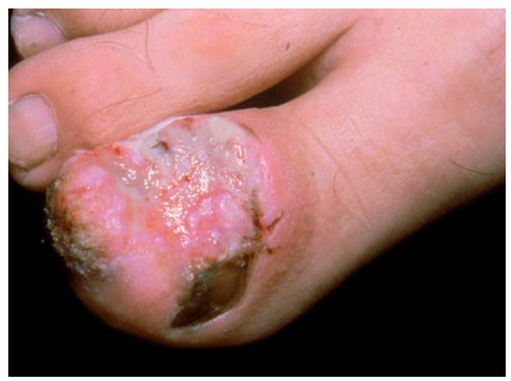

Fig 5 - Long standing pinkish, fragile, and oozing nodule disrupting the architecture of the nail apparatus. This was an amelanotic melanoma. Note the pigmented remnant of the nail plate.

Bertrand RICHERT

A non invasive method for ending thumb and fingersucking habits

Kozlowski JT A non invasive method for ending thumb and fingersucking habits. J Clin Orthod 2007 ;41 :63

Thumb and fingersucking habits can have many negative consequences in terms of dental and skeletal growth.
This orthodontist and his wife, a pediatric dentist, have been using for almost 10 years a bitter transparent liquid which applied onto the nails discourages nail biting and thumb sucking. Toxicology reports indicate that the product's active ingredient, denatonium benzoate, is completely safe, even for daily application. It costs is less than 5 $ for 10 ml.
It is also easy to use and is preferable to intraoral appliances such as thumb cribs which have shown inconsistent results and can interfere with eating and speech.
The orthodontist uses the following protocol: at the initial consultation he discusses the benefits of stopping the habit with both the patient and the parents. He reviews the alternative treatment for habit cessation including thumb cribs and how the appliance may affect speaking and eating. He then applies some nail lacquer onto the parent's and patient's nails and offer them the bottle as a gift, schedules a new appointment one month later and ask the parents and the child to taste the lacquer on their nails.
At the next appointment, almost every patient will have discontinued the habit.
Compared with other treatments for cessation of thumb - and finger sucking habits - this nail lacquer is faster, easier, less invasive and less expensive. It has a more unpleasant taste, lasts longer and is much more effective than other deterrent products he has tried. Since he started to use this product, he has not placed a single habit-breaking appliance.

COMMENTARY B. RICHERT

This looks like an advertising article where no scientific value appears. The results are probably due the dissuasive effect: it is more the fear of having thumb cribs placed than the bitter taste of the nail lacquer that really works ...
For us, as Europeans, it is surprising that a scientific journal publishes such an article with an illustration of the nail lacquer, its price, the photo of the dentist smiling as well as his address ... •

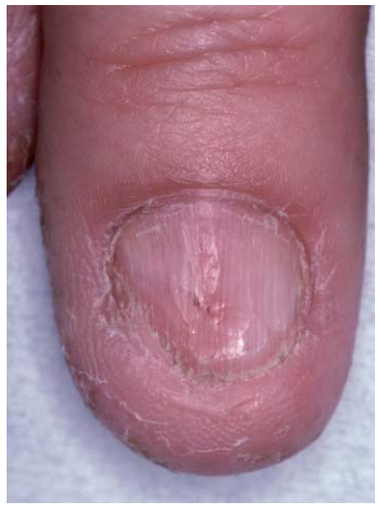

Fig 1 - Onychatrophy, spared proximal nail fold, but chewing of the extremity of the finger is responsible for scaling and cracks.

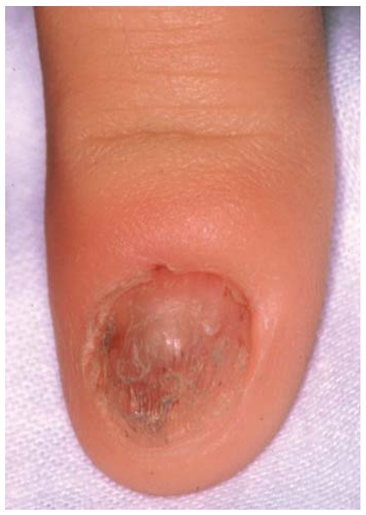

Fig 2 - Onychatrophy, splinter hemorrhages and subacute paronychia induced by onychophagia.

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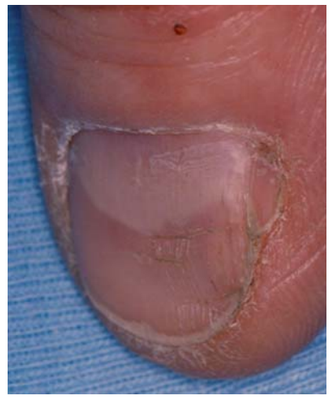


Fig 3 - Partial Beau's lines, hyperkertosis of a lateral sulcus and enlarged lunula resulting from repeated biting of the proximal part of the nail plate.

Onychomycosis nail counts

Cham P, Chen S, Grill J, Warshaw E. Validity of self-reported nail counts in patients with onychomycosis : a retrospective study. J Am Acad Dermatol 2008 ;58 :136-141

The aim of this study was to assess the rate of concordance between patient and health care professional (HCP) counts of affected nails in patients with onychomycosis.
567 patients, all mycologically positive for toenail onychomycosis, from 3 clinical trials were retrospectively analyzed. Inclusion criteria for all 3 trials required that the patients have mycologically confirmed toenail infection and at least 25% involvement of one or more toenails. At the baseline visit for all 3 studies, each patient completed a self-administered questionnaire which included the question: "How many of your nails have fungus?" Other items collected included demographic data and onychomycosis history. Nail counts were conducted by two dermatologists, 3 medical students, one registered nurse, and one pharmacist, all of whom were trained by one of the investigators. HCPs independently indicated the number of affected nails on a separate form, blinded from patients, during the baseline clinical visit. After statistical analysis, it was shown that, overall, there was fair to moderate agreement between patients and HCPs for counts of affected toenails and fingernails. These findings are consistent with studies of other conditions (nevi counts or swollen and tender joints counts).
In this study, the patients frequently undercounted the number of affected nails. It was also noted that as patient nail counts increased, agreement decreased from 77% (1 toenail) to 28% (6-9 toenails). Interestingly, agreement increased to 51% in individuals with all 10 toenails affected ; this intuitively makes sense as « all or nothing » may be easier to quantify than values in between.
This study has however several limitations. First, it may prove impossible to generalize the results of this study. Patients were volunteers and were informed about onychomycosis being included in the clinical trials and had therefore a heightened awareness of the abnormal appearance of affected nails compared to the general population. Second, HCPs evaluated nails with different primary objectives for the 3 clinical studies. Third, the 6 HCPs who evaluated patients had different levels of experience, although all were trained by one investigator. Fourth, a more rigorous approach would have included microscopic evaluation and culture of samples from each nail to confirm infection. Given that all patients had at least one nail (target nail) that was positive on mycological culture, the likelihood of misdiagnosing onychomycosis in other nails is likely to be low.

To summarize, this pilot study found fair to moderate agreement between patient counts and HCP counts of affected onychomycotic nails. More studies are needed both to determine interobserver agreement within patients and within HCPs as well as to evaluate the possible benefit (increased agreement) of providing training to patients on the signs of onychomycosis. •

Bertrand RICHERT

Malignancy and cancer treatment-related hair and nail changes

Hinds G, Thomas V. Malignancy and cancer treatment-related hair and nail changes. Dermatol Clin 2008; 26 :59-68.

Although some paraneoplastic hair disorders have been described, most nail changes associated with internal malignancy are non-specific.
The treatment of cancer with chemotherapy and radiation therapy may also induce abnormalities of the hair and nails. Generally speaking, these changes can be linked to cytotoxic affects of the drug or to the effect of direct, physical radiation damage to the skin.

Paraneoplastic hair alterations are largely detailed (acquired hypertrichosis lanuginosa, alopecia aerata, cicatricial alopecia, alopecia neoplastica) as well as cancer-treatment hair disorders (anagen effluvium, telogen effluvium, hair color and texture changes, follicular spicules, radiation therapy-induced hair changes) but we will only summarize the section devoted to nails.

There are no pathognomonic nail signs for internal malignancy.
Chemotherapeutic agents are the most frequent cause of drug-induced nail changes.
Docetaxel, cyclophosphamide and doxorubicin are commonly associated with nail toxicity. Daunorubicin, 5-fluorouracil and vincristine have also been reported to affect the nails.

Acquired digital clubbing
Acquired digital clubbing is an increased convex curvature of the nail plate. The angle between the proximal nail fold and the nail plate increases to over 180°.
Althougth the exact etiology is unknown, clubbing has been most frequently associated with primary bronchogenic carcinoma and mesothelioma. It has also been associated with gastrointestinal tumors and tumors metastatic to the lung.

Yellow nail syndrome
Yellow nail syndrome (YNS) is a rare disorder characterized by slow-growing, thickened yellow nails. In most cases, all 20 nails are involved, with transverse and longitudinal overcurvature of the nails and absent cuticles and lunulae. In addition to the nail findings, YNS is characterized by lymphedema and respiratory tract involvement, including sinusitis, pleural effusion and bronchiectasis.
There are several case reports of paraneoplastic YNS associated with internal malignancies, including carcinomas of the breast, endometrium, gallblader, larynx, and lung, metastatic melanoma, metastatic sarcoma, Hodgkin's disease and mycosis fungoïdes.
Paraneoplasic YNS is thought to result from either direct tumor infiltration into already dysfunctionnal lymphatics, or from the release of tumor mediators that inhibit lymphatic function.
Chemotherapy-induced nail changes may involve the nail matrix, resulting in aberrations of nail plate growth (Mee's lines, Beau's lines, onychomadesis, or melanonychia), the nail bed (resulting in Muehrcke's lines, onycholysis, sub ungual hemorrhage or hematoma), or the proximal nail fold (eg, paronychia, periungual pyogenic granuloma).

1. Nail plate alterations:
Retention of matrix keratinocyte nuclei in the nail plate (parakeratosis) will result in a white, transverse band appearing across the nail plate. This band of true leukonychia usually parallels the contour of the lunulae and is termed Mee's line.
Mee's line has been reported in association with Hodgkin's disease and carcinoid tumors. Chemotherapeutic agents, commonly vincristine, doxorubicin and cyclophosphamide are also associated with Mee's line.
Temporary cessation in nail growth results in transverse groves known as Beau's line (Fig 1), and complete matrix toxicity results in nail plate shedding known as onychomadesis (Fig 2).
In Beau's lines, the depth of the depression is associated with the severity of matrix keratinocyte toxicity whereas the longitudinal width corresponds with the duration of the insult.
Development of melanin pigmentation of the nail plate is termed melanonychia.

Bertrand RICHERT

Fig 1 - Beau's lines affecting the nails at the same level during chemotherapy (Courtesy of O. Correia, Lisbon, Portugal).

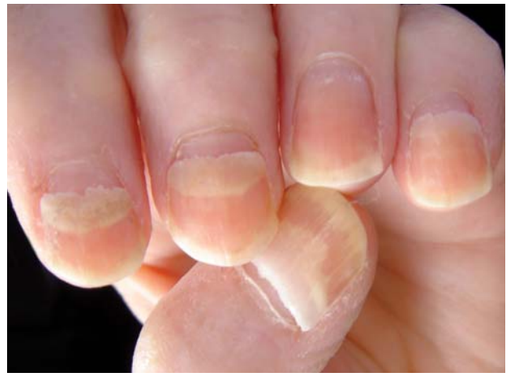


Fig 2 - Onychomadesis of all nails at the same level during chemotherapy.

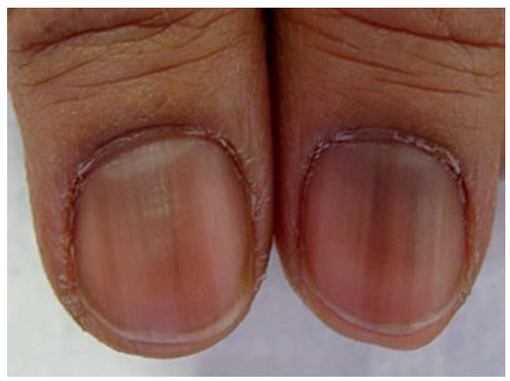


Fig 3 - Longitudinal and diffuse melanonychia during chemotherapy.

Three patterns of melanonychia exist : longitudinal, transverse and diffuse. More than one pattern of melanonychia may be observed in an single nail plate (Fig 3). Transverse melanonychia have been reported to occur in the context of medication, including chemotherapy and electron-beam radiation therapy. Vincristine, adriamycin, doxorubicin, hydroxyurea, bleomycin, cyclophosphamide, daunorubicin, dacarbazine, 5-fluorouracil, methotrexate, and electron beam therapy have all been reported to cause transverse melanonychia or mixed pattern melanonychia. These pigmentions tend to resolve after the completion of therapy.

2. Nail bed changes:
Vascular congestion in the nail bed can result in the formation of blanchable, paired, white lines termed Muehrcke's lines (Fig 4). These apparent leukonychia are most commonly seen in association with hypoalbuminemia and nephrotic syndrome.
If nail bed hemorrhage occurs, a subungual hematoma may occur. If the hematoma is severe, the nail plate may become completely detached from the nail bed with a loss of the nail. Taxane chemotherapy agents such as docetaxel and paclitaxel are common inducers of hemorragic onycholysis. Ixabepilone has also been noted to result in this form of nail loss.

3. Proximal nail fold changes:
Inflammation of the nail folds or paronychia, and pyogenic granulomas may be observed in the context of a number of drugs. Epidermal growth factor inhibitors, mitoxantrone, taxanes and methotrexate have been associated with paronychia, pyogenic granulomas or both. •••

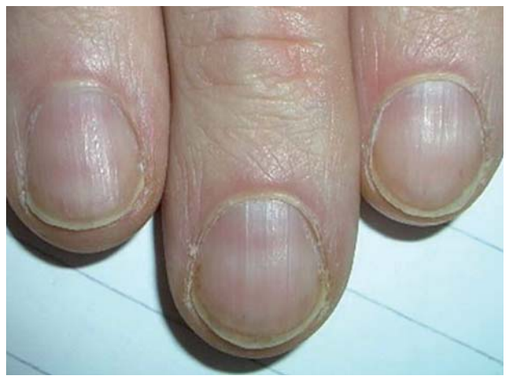


Fig 4 - Muerkhe's lines during chemotherapy (Courtesy of BM Piraccini, Bologna, Italy).

Bertrand RICHERT

Bertrand RICHERT

Malignancy and cancer treatment-related hair and nail changes

COMMENTARY B. RICHERT

This article has been taken from the Dermatology Clinics in 2008 on malignancy and cancer-induced hair and nail changes. In a previous edition, the Italian team of Bologna delivered a high quality practical paper. It is a pity that this new version has not been developed enough.

In fact, the part on hair is largely detailed and of good quality. However, neither management ie frozen cap, use of minoxidil nor adjuvant cosmetic care both being extremely useful (wig, gel containing artificial hairs to shape eyebrows...) are mentioned.

As for the nail section, it is very weak. First, the confusion on transversal leukonychias and Mee's lines, is very common in American literature; transversal leukonychias due to arsenic poisoning - and only these - may be called Mee's lines (Fig 5). Otherwise, their cause should be specified (thallium-induced transverse leukonychia, traumatic leukonychia ...) (Fig 6).

To affirm, that there are no paraneoplastic nail disorders is to ignore acrokeratosis paraneoplastica (Bazex & Dupré syndrome) (Fig 7). This condition usually affects males over 40. The nails are invariably involved and are typically the earliest manifestation of the condition. Toenails are more often affected than fingernails. The main sign is brittle nails. The latter are thin, soft, broken off and crumbled. The condition evokes nail psoriasis and cautious cutaneous examination may reveal symmetric psoriasiform erythematosquamous lesions on the fingers, feet, ears and nose. This real paraneoplastic sign may precede the manifestation of the malignancy - usually of the upper respiratory or digestive tracts and disappear with its removal and reappear with its recurrence. The constant paraneoplastic trait of the condition imposes a thorough investigation to discover the tumour. Surprisingly, the nail involvement may not always clear totally with treatment of the tumour contrary to the other skin lesions.

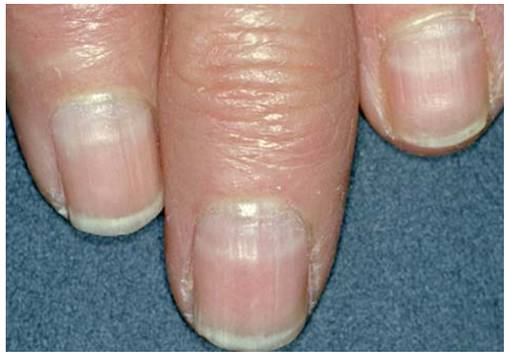


Fig 5 - Arsenic poisoning resulting in Mee's lines. They occur at the same level on each nail. (Courtesy of R. Daniel, Jacksonville, USA).

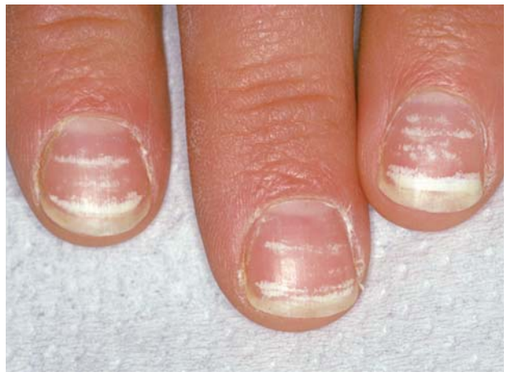


Fig 6 - Traumatic leuconychia. They occur on one or several nails.

The section on the side effects of chemotherapy on the nail apparatus is superficial. It is a pity to have restricted the side effects of the new antineoplastic drugs on the nails to 10 lines in an article of 10 pages.

Nail involvement during chemotherapy is common. It rarely alters the patient's quality of life. However, the new drugs such as taxanes and epidermal growth factor receptor (EGFR) inhibitors are associated with such severe nail involvement that a grade III has been added to the Nail Common Toxicity Criteria Grading. This grade corresponds to the impossibility of performing normal daily activity.

These nail side effects are the most common side effects as they occur in more than 60 % of patients treated with docetaxel. It has been clearly established that frequent and prolonged exposure to the drug is the most significant risk factor for the development of docetaxel-induced nail changes, regardless of the dose. This is why patients receiving less that 3 cycles do not suffer nail side effects whilst almost 90% of patients receiving more than 7 cycles will develop nail side effects. Daily regimens are more toxic for the nail than a regimen of every three weeks.

Nail changes are reported as acute painful onycholysis - with or without suppuration - development of a typical orange discoloration of the nail plate, splinter haemorrhages and sometimes a haemorrhagic onycholysis (Fig 8). Subungual abscesses are also described and more recently pyogenic granulomas. A neurogenic mechanism for these nail changes has also been suggested from the absence of nail change in a denervated hand. •••

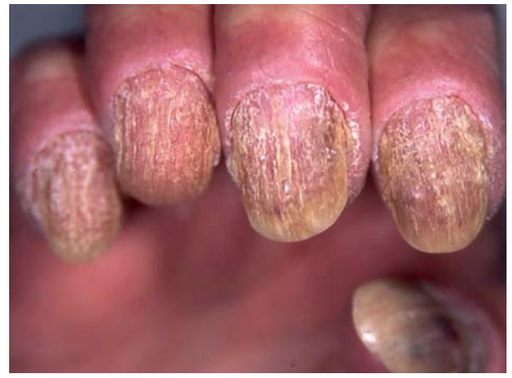


Fig 7 - Acrokeratosis paraneoplastica (Bazex & Dupré Syndrome) (Courtesy of O. Cogrel, Bordeaux, France).

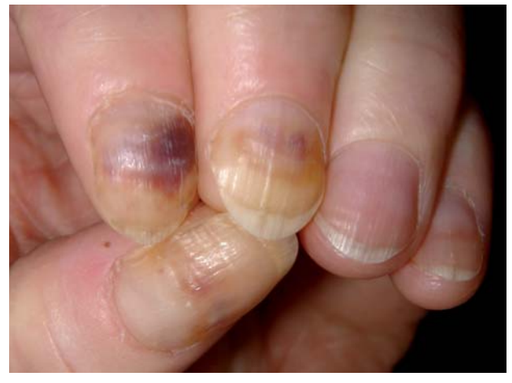


Fig 8 - Haemorrhagic onycholysis induced by taxanes.

Malignancy and cancer treatment-related hair and nail changes

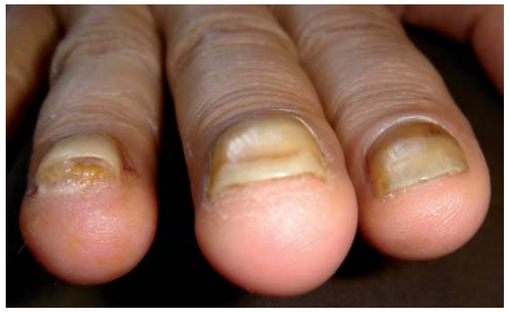


Fig 9a - Painful onycholysis from docetaxel.

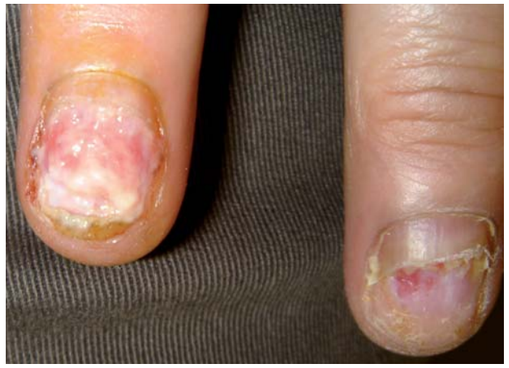


Fig 9b - Clipping of the detached nail plate allows the swollen bed to expand and relieves the patient.

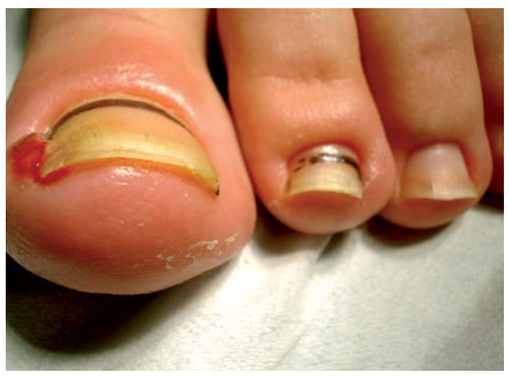


Fig 10 - Subacute paronychia and pyogenic granuloma induced by herceptin.

It is imperative to recognize these side effects in order to treat them adequately as they are extremely painful for the patient:

- wearing a frozen glove (- 30°), similar to the frozen cap used for minimizing chemotherapeutic alopecia, reduces of 40% the nail side effects.
- if a painful onycholysis appears, one should clip off all the whole detached nail plate, thus allowing the swollen and/or infected nail bed to expand and then to apply an antiseptic solution (Fig 9a and 9b).

EGFR receptor inhibitors are a new category of chemotherapeutic agents called "targeted" and are widely used routinely to treat common cancer affecting the lung, colon and breasts. Unfortunately they are also are also toxic for nails. Within the first months following the beginning of the treatment, 15% of patients will develop a paronychia, associated or not with a pyogenic granuloma (Fig 10).
This periungual inflammation is very similar to the one observed with some antiretroviral such as indinavir. These lesions also widely interfere with daily activities. Their treatment remains delicate as it is impossible to suspend the chemotherapy. Management consists in local care with antiseptics and anti-inflammatory creams (corticosteroids), application of silver nitrate on pyogenic granulomas. Curettage and any surgical procedure should be avoided as recurrence is the rule. The condition will wane in the weeks or months after cessation of the chemotherapy.
As for the multiple longitudinal melanonychias resulting from activation of the matrix melanocytes, they will gradually disappear over a period of several months.

We can only recommend our readers to refer to the previous edition ...

Piraccini BM, Iorizzo M. Drug reactions affecting the nail unit: diagnosis and managment. Dermatol Clin. 2007;25:215-221. •

Reversible cutaneous hyperpigmentation and nails with white hair due to vitamin B12 deficiency

Niiyama S, Mukai H. Reversible cutaneous hyperpigmentation and nails with white hair due to vitamin B12 deficiency. Eur J Dermatol 2007;17:551-552

A 55-year-old Japanese woman complained of easy tiring. The patient was referred to the dermatology department for pigmentation lesions that appeared about a year before. The scalp hairs were white and there were hyperpigmented macules on her neck, trunk and arms. Finger- and toenails showed longitudinal hyperpigmented streaks. There was also an increased pigmentation of the gingiva. Her tongue looked normal. A biopsy performed on an hyperpigmented macule of the arm revealed an increased number of melanocytes in the basal layer with numerous melanophages in the upper dermis. Laboratory studies identified an pernicous anemia. The anemia responded dramatically to parenteral administration of 500 µg of mecobalamin. The scalp hair began to repigment during the third month of therapy. At a follow-up visit six months later, the patient's skin and nail color were completely normal.
Pigmentation from vitamin B12 deficiency is more pronounced on the hands and feet, especially in the creases of the palmar and plantar surfaces. Occasionally, hyperpigmentation has been accentuated over the terminal phalanges and the pressure points such as the elbows, malleolis and knees. In some cases, pigmentation may also occur in the oral mucous membrane with a spotty pigmentation of the tongue. The nails may show longitudinal hyperpigmented streaks (Fig 1). A paradoxal finding is premature greying. The mechanism of hyperpigmentation in vitamin B12 deficiency has frequently been discussed by several authors. It is most likely related to alterations in tyrosinase levels. A deficiency in vitamin B12 causes a decrease in reduced glutathione levels, and tyrosinase - an enzyme necessary for melanogenesis - is inhibited by reduced glutathione. The decrease in reduced glutathione levels in vitamin B12 deficiency causes an increase in tyrosinase levels, giving rise to hypermelanosis.
The simultaneous occurrence of hyperpigmentation of the skin, mucous membranes and nails, accompanied with depigmentation of scalp hair, is a paradoxical finding. Even though premature grey hairs have been reported with vitamin B12 deficiency, only one case of reversible hypopigmentation of hairs has been previously reported in dermatological journals.

Fig 1 - Longitudinal melanonychias as they may appear in a vitamin B12 deficiency.

COMMENTARY B. RICHERT

A simple clinical case to remind us not to forget vitamin B12 deficiency as a cause of multiple polydactylous melanonychia.
One should however note that vitamin B12 deficiency may present either with multiple separated pigmented streaks or with a diffuse brown discoloration of the nails.
It's regrettable that no hypothesis for premature grey hairs is proposed. •

The nail - What's new ? n°2

Clinical cases

Robert BARAN

Osvaldo CORREIA

Robert Baran's clinical case

This 35 year-old woman, married, two healthy children, is a housewife who never travels. She is rather slim, 50 kg.
Some months previously she had been pricked on the most distal area of the pulp of the 5th left finger. Otherwise she was in good health. She complained of a very slowly growing tumour, bright red at the front of the free edge of the nail plate.
At close examination this isolated lesion presented with a cherry stone size in front of the distal groove, a dark red colour, and it did not bleed at physical contact. Finally it was perfectly painless (Fig1).

What is the possible diagnosis?
1- Post traumatic granuloma?
2- Hematoma or late angioma?
3- Pyogenic granuloma?
4- Perineurioma?
5- Kaposi tumour?
6- Glomus tumour?

Which lab tests could help us?
1- MRI
2- Scanner
3- Sonography
4- Vascular echodoppler
5- Radiography
6- Dermoscopy
7- HIV, mycology, bacteriology
8- Excisional biopsy

MRI with gadolinium (after ruling out a renal insufficiency) would give the diagnosis.
But for practical reasons the patient preferred to get rid off the lesion and the pathologist gave the unexpected answer, it was a glomus tumour (Fig2).
This was of course a misleading tumour because it was absolutely painless. However, in rare cases, glomus tumours may be painless, especially when they are multiple but this is exceptional in isolated forms.

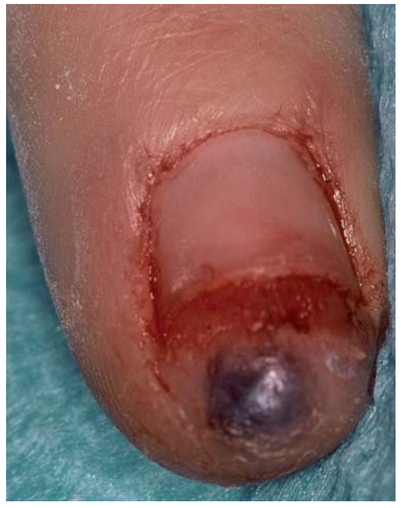


Fig 1 - Red brown tumour painless of the tip of the left fifth digit.

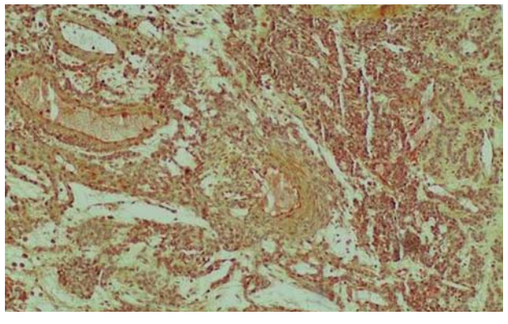
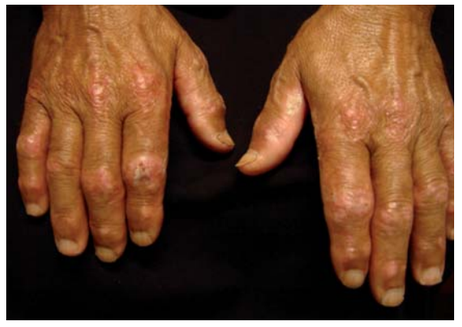


Fig 2 - Pathology reveals an unexpected appearance of glomous tumour.

Osvaldo Correia's clinical case

A 72-year-old man, caucasian, with polycitemia vera had been treated with hydroxyurea for 15 years. He was sent to our Dermatology Center, for scaling lesions and heterogeneous pigmentation on the scalp, face and dorsum of the hands. Careful physical examination showed multiple actinic keratosis at sunlight exposed skin and a squamous cell carcinoma on the nose, that were confirmed by biopsy specimens. Dermatomyositis (DM)-like eruption with scaly linear erythema and poikilodermia on the dorsum of the hands was observed (Fig1-2) and confirmed by biopsy. There was no proximal muscle weakness. On dermoscopy, nail changes included longitudinal melanonychia and diffuse darkening (Fig 3). Capillaroscopy with dermoscopy revealed scarce nail fold telangiectasia, microhaemorrhages and fibrosis (Fig 4). Laboratory findings, including ANA, aldolase or CK were normal. Hydroxyurea (HU) dermopathy develops several years after the initiation of HU treatment in up to 10-35% of patients. Nail abnormalities are uncommon. Acral areas are the most frequently affected.
DM-like eruption with Gottron's sign is not frequent, but very suggestive of HU adverse reaction. Cutaneous carcinomas are severe side effects of HU, have rarely been reported and occur after several years of treatment.



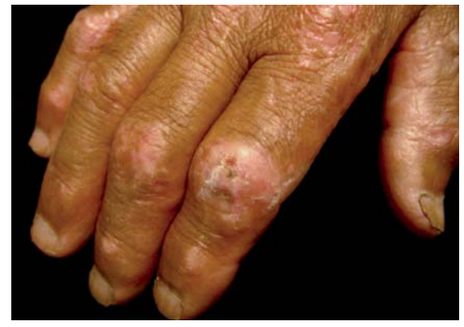


Fig 1 & 2 - Dermatomyositis-like eruption with scaly linear erythema and poïkilodermia on the dorsum of the hands.

Fig 3 - Longitudinal melanonychia and diffuse darkening.

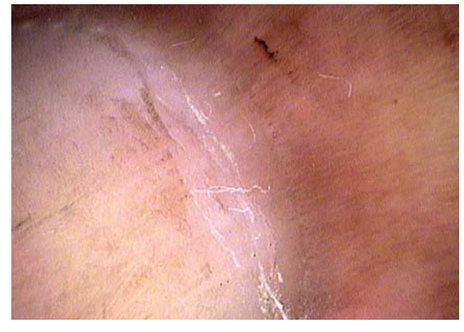


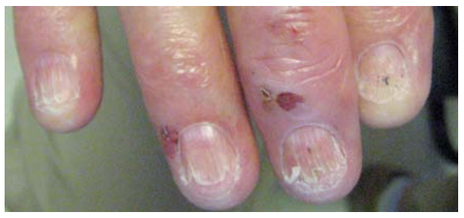
Fig 4 - Scarce nail fold telangiectasia, microhaemorrhages and fibrosis.

Sophie GOETTMANN

Sophie Goettmann's clinical case

A 67 y.o. patient without special medical history sought advice for a fingernail dystrophy which had lasted about a year.
Clinically the nail plates are thinned, with ridging, there were splinter haemorrhages and pronounced fragility. The right index finger showed onychatrophy (Fig1). Periungual skin is thin, atrophic, erythematous and some erosions are visible. (Fig2)
The first diagnosis was of lichen planus. Two biopsies on the matrix of the right thumb and on the nail bed of the same finger were carried out. The histophatology showed massive deposits of amyloidosis in the dermis.
The patient was hospitalized for a complete check-up which revealed a hypertrophy of the submaxillary glands, a sicca syndrome, œdema of the lower limbs related to heart insufficiency. Biological tests showed a monoclonal gammapathy (immunoglobine lambda (Fig 3a,b)).
The patient was treated with a six sessions of melphalan associated with dexametasone. This treatment reduced the rate of the free light chains, which was of good prognosis. Skin and nails abnormalities remain stable when treated.

COMMENTARY
In this patitent, who had no past history, the appearance of nail dystrophy allowed a primary systemic amyloidosis to be revealed associated with monoclonal gammapathy. Lichen planus was suspected immediately, but the diagnosis was corrected by the pathology. Retrospectively, the presence of splinter haemmorrhage and subungual purpura, skin erosion linked to a serious fragility of the skin, rarely observed in lichen planus, should have made the physician to suspect amyloidosis.
However, only ten cases of systemic amylosis with onychodystrophy, including this case, have been published so far.



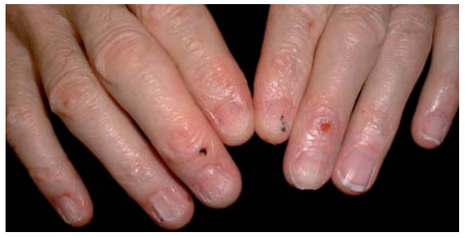
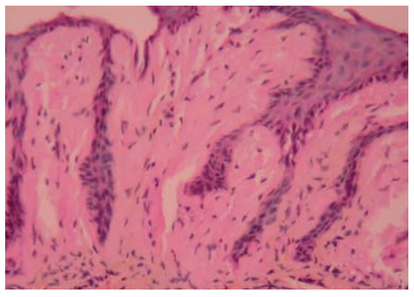


Fig 1 & 2- Longitudinal ridging, nail fragility, index finger onychatrophy, splinter haemorrhages associeted with erosive finger skin.



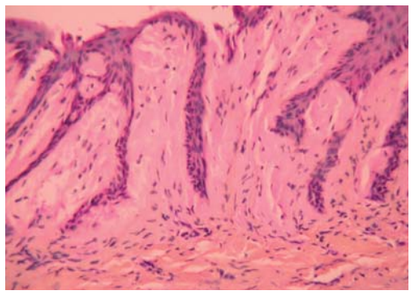


Fig 3a & 3b -Massive amyloid deposits in the dermis.

Eckart HANEKE

Eckart Haneke's clinical case: a thirty-year long nail disease

A 75-year-old female patient presented with a nail disorder involving all fingers and toenails. She had consulted many physicians, among whom were several practicing dermatologists and also university professors. Apparently the diagnosis most commonly made was onychomycosis; however, all nail specimens taken over the years failed to grow fungi or other potential nail pathogens. A diagnostic biopsy had never been performed or even considered. Despite all these negative mycological cultures she received a variety of antifungal treatments, none of which improved her nails.

She reported that she had had chronic hepatitis C for the last 20 years, but was otherwise more or less healthy. Currently she was under interferon therapy for her HVC infection. She was very upset that many doctors, particularly internists, orthopaedic surgeons, gynaecologists, and dentists, considered her infectious and treated her as if she had leprosy. Interestingly, her hepatitis C did not scare them. Because of recurrent urinary tract infections, she was given many courses of antibiotic therapy and was then treated with a vaccine made from her own bacteria.

All nails were uniformly affected. They were destroyed to a high degree and the nail remnants were opaque, discolored, rough, extremely brittle, short, did not reach the hyponychium, and were very soft over the area corresponding to the lunula, which could not even be discerned. The cuticles had disppeared completely (Fig 1-2). She complained of severe itching. Her manual dexterity was considerably diminished. For instance, she could not pick up a coin or other similar objects from a flat surface. What "made her mad" was that she was not treated like a normal person (see below the patient's description). She did not have any other skin, oral or genital mucous membrane lesions.
The clinical diagnosis of nail lichen planus was obvious.
The disease and its implications were discussed with the patient. She wondered why no diagnosis had been made before, which was indeed surprising as the clinical picture was very typical for ungual lichen planus. Her most important concern was, however, to get a certificate that her nail disease was neither contagious nor infectious. She reported that she had made notes about her nail condition and indicated how it had influenced her life and she promised to send them to me.

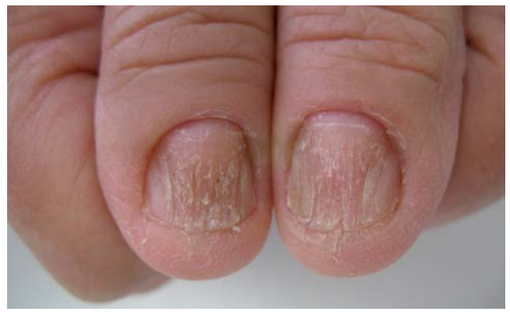


Fig 1 - Lichen planus trachyonychia. In a twenty-nail dystrophy.

Fig 2 - Same patient.

This is the report she transmitted on her nail disorder:
"Thirty years of a nail disease do not only interfere with female patients' lives during most daily routine work but also lead to a policy of using the hands while trying to hide the nails. Curiously enough, in situations when the diseased nails were exposed you remember the way the medical professional reacted.

In daily life, destroyed finger nails appear to raise motherly instincts in other women. After 3 decades of the disease, one disposes of a whole reservoir of recommendations, reported experiences, addresses and therapeutic approaches, not forgetting all the kinds of cosmetic concealing measures that had presumably helped with their family clans to improve the psychological situation they assumed would be poor in a woman with ugly nails.

Men of any age would rapidly and embarrassedly avert their eyes from diseased nails. Only old men would permit themselves, while nodding their heads, to declare that all this came from the use of the sauna.

Eckart HANEKE

Eckart Haneke's clinical case: a thirty-year long nail disease

Physicians immediately pay attention to diseased nails. It appears that their interest in nail disorders is much greater the more their speciality differs from dermatology. It seems that a patient with a nail disease distracts them from their routine professional life of looking into patients' eyes or ears.

Orthopaedic surgeons like to write referral forms for befriended rheumatologists. This is because they believe the rheumatologist will certainly find a tiny inflamed joint attached to the destroyed nails.

Internists try to evaluate. The abdomen becomes the playfield of all nail disease aetiologies. In case all their efforts remain in vain and no good diagnosis is found they try geographical particularities, genetics or other exotic varieties. The patient leaves their office with the belief that the real cause of her nail destruction is an imported one. The scapegoats tend to be people from the Balkans, Kazakhstan, Baltic countries and also people who have spent their holidays in Thailand. They bring back nail conditions as a souvenir "Have you already asked the Institute of Tropical Medicine ? There, they always know of such diseases," is a remark often heard in internal medicine.

When a Zurich psychiatrist found out that Asian patients developed curious diseases because they were afraid their ancestors would not be able to follow them into their Swiss asylum, other doctors took up this idea and encouraged their patients to think about the roots and sufferings of deceased family members.

Urology, gynaecology and dentistry: During the 3 decades the following conclusions were reached:

a) She must be the carrier of an infectious and contagious disease.
b) Physicians of these specialties are afraid of any type of unknown pathogens.
c) Scores of pathogens must have accumulated in their offices.
d) Physicians of these specialties know particularly well about the fading efficacy and the dangers of drugs prescribed.
e) For these reasons, they themselves are particularly scared of every infection.

Gynaecologists upon seeing the destroyed nails would avoid shaking hands with the patient. The nurse present would whisper: "You do not know what other infections we get here. We see much worse than yours." Dentists called their assistants: "Is it now the turn of the patient with the fingernails? Take care, you never know what she is really suffering from." At the urologist's the urine sample had to be produced in the men's restroom. Motto: "Men do not get something like this so easily."

To be honest, female doctors courageously shook hands with the patient in contrast to their male colleagues. They also permitted the use of the ladies' restroom. They wrote referrals for a dermatologist with the remark that "dermatology has to be classified as being one of the shadiest areas in medicine". Female doctors were also not shy of telling the truth: "Lab guinea pigs are not useful for the research of peculiar nail diseases. And furthermore, nail remedies are not profitable for the pharmaceutical industry."

Visits to dermatologists always followed the same pattern. Older dermatologists would invariably request a nail specimen and finally say that no fungus had been found. Then they showed a series of a number of diseases - first from books, then on the computer screen. It resembled a game of questions: "Do you believe these nails here resemble your fingernails? Does anyone in your family have nails like yours? You simply have none of the symptoms for nail conditions reported in the computer. Do you suffer from hair loss? Do you have spotted alopecia? Are you hiding a rash anywhere else? Which doctors have you already consulted for your strange disorder?" Or: "Please come back in a year, perhaps another sign will develop allowing a diagnosis to be made." Younger dermatologists shortened the procedure. They immediately prescribed a lacquer and said: "unfortunately nails take a long time to cure. In six months, the condition will be over or at least we will know that it is not a fungal disease."

COMMENTARY E. HANEKE

This case illustrates that even though some doctors dismiss nail conditions as not being serious or life-threatening they may cause considerable distress and severely reduce the quality of life. Better knowledge of nail disorders is therefore necessary not only for dermatologists.

COMMENTARY R. BARAN

This brings to light a patient's feelings who considers herself abandoned by medicine, and after reading it I really had the impression that our responsibility was considerable, not only medically but also psychologically.

Jose Maria MASCARO

Jose Maria Mascaro's clinical case

A 44 year old cattle breeder was referred to our clinic for an inflammatory lesion of the right index finger (Fig 1)that had started 3 months previously and had not improved despite topical antibiotics, such as mupirocine and systemic (azitromycine 500 mg/day for 3 days, then ciprofloxacine 500 mg, twice a day for 15 days, repeated twice). Past history revealed that in the last 3 years he had presented with whitlows on different fingers of the hands. Clinically, moist erythematous lesions with horny like crusts around the yellowish thickened nail, were associated with a proximal transverse groove. An isolated crust distant from the tip of the finger on the palmar aspect of the 2nd phalanx existed (Fig2). There was no pain but a slight tenderness. No regional lymph nodes were found.

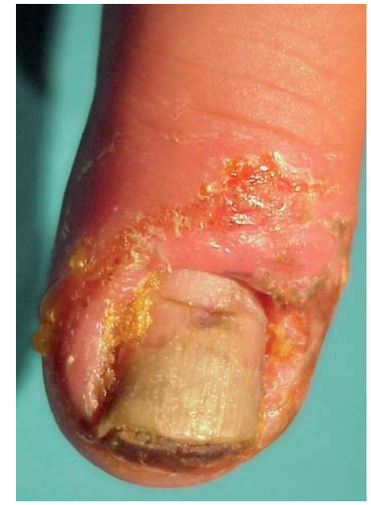


Fig 1 - Erythematous, oozing lesions, yellowish crusts surrounding a thickened nail due to subungual hyperkeratosis and proximal tranverse groove.

The reasoning

There is an inflammatory process without tumour. The patient's occupation (cattle breeder) should make us consider, apart from a diagnosis of pyodermatitis, the possibility of fungal infection and even other specific infections, such as swine erysipelas, tuberculosis and also herpes especially in immunosuppressed individuals.
Mycological cultures were negative. Repeated bacterial culture only yielded negative staphylococci coagulase and enterococci fecalis sensitive to ciprofloxacine.

Why was the treatment a failure?

A simple important fact which had not been taken into account by the physician who referred the patient to me, was that the man was tall and strong and weighed 125 kgs. Therefore a treatment doubling the dose of ciproflowacine for three weeks, with local cleaning using potassium permanganate (1/10.000) stopped the inflammatory process. The nail had to be avulsed and four months later it had grown back almost normally.

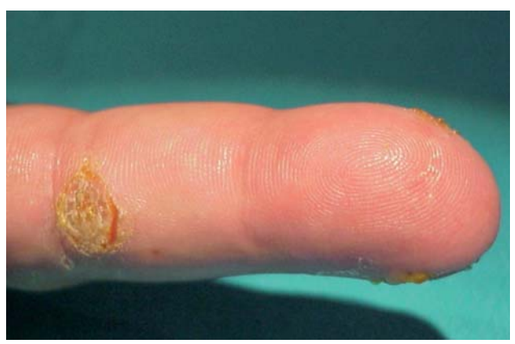


Fig 2 - Palmar aspect of the second phalanx crusty lesion distant to the fingertyp involvement.

Conclusion

The lesson to be learnt from this case of multifocal pyodermatitis with paronychia is that sometimes the key for therapeutic success may be as easy as simply prescribing doses of drugs in proportion to the patient's weight.
"Elementary my dear Watson" as Sherlock Holmes would have said.

Bianca Maria PIRACCINI

Bianca Maria PIRACCINI

Bianca Maria Piraccini's Clinical Case

A 17-year-old girl consulted for painful inflammation of the great toenails, associated with yellowish nail discoloration and arrested nail growth that had slowly developed over the last 3 months. The clinical examination (Fig 1) showed marked edema and erythema of the proximal nail fold of both the great toenails; the cuticles were absent and the nail plates were thick and yellow in color (Fig 2).
The patient was in good health, she is used to jogging three times a week, and denied acute trauma to the feet.

What is your diagnosis?

Retronychia describes a proximal ingrowing of the nail plate, which penetrates into the proximal nail fold producing a painful paronychia.

The first step for the development of retronychia is an acute or chronic trauma to the nail that results in onychomadesis. The detached nail plate is, however, not shed, but remains attached to the nail fold. Possible reasons for failure of nail shedding include footwear-induced continuous trauma to the distal nail and persistence of lateral nail plate attachment to the folds. As the new nail plate grows forwards, it fails to push off the old nail plate, but grows beneath it and pushes the old nail further upwards. The proximal nail fold then becomes inflamed (Fig 3), and the nail plate becomes thicker and discolored. The yellow color of the nail is mainly due to nail thickening, since the nail becomes composed of superimposed layers of plates. Pyogenic granulomas in the proximal nail fold can occur (Fig 4).

Resolution of inflammatory changes is obtained by nail avulsion.

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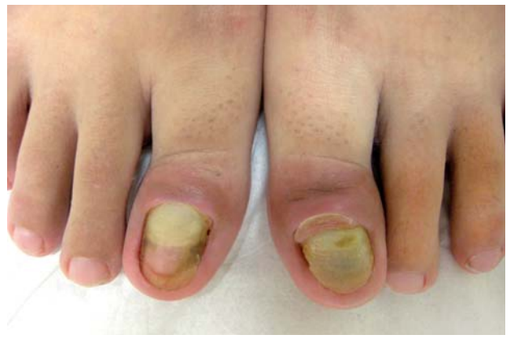

Fig 1 - Acute paronychia of the great toenails. The nail plates are yellow in color.

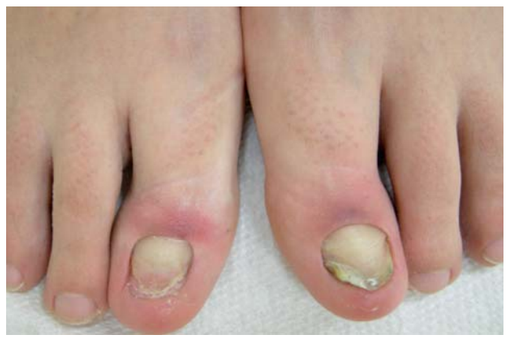

Fig 2 - Same patient as Fig 1, eight months after nail plate avulsion.

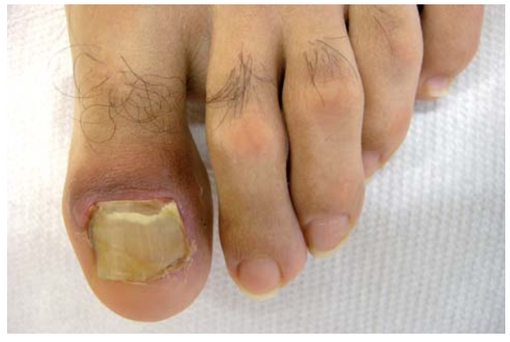

Fig 3 - Retronychia: the old nail plate has not been shed and penetrates into the lateral nail folds.

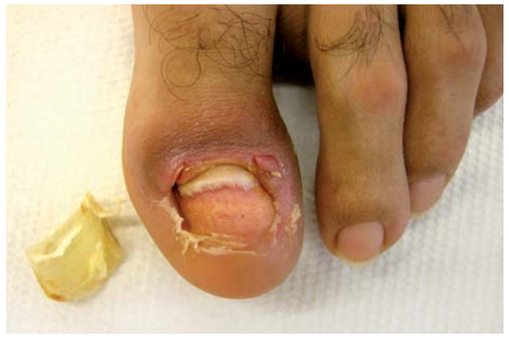

Fig 4 - Same patient as Fig 3 after nail plate avulsion: note the presence of a newly growing nail plate.

Bertrand RICHERT

Bertrand RICHERT

Bertrand Richert's Clinical case

This 3 year old girl presented for the spontaneous arising of a non tender tumour of the lateral aspect of the left second toe, facing the distal interphalangeal joint (Fig 1). There was no history of trauma or wound at that site. The lesion was growing and the parents were worried Clinical examination reveals a pinkish, firm, smooth nodule covered with normal skin. Careful examination of the integument and mucous membranes was normal. An X-ray prescribed by the pediatrician was normal too.

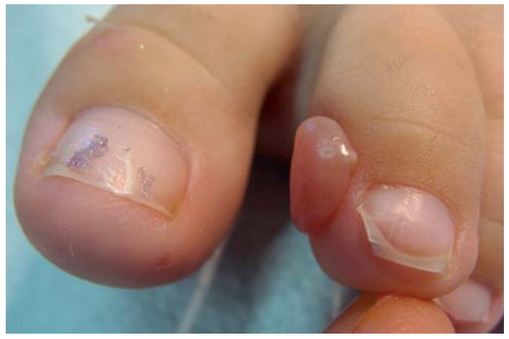

Fig 1 - Painless firm and well circumscribed tumour on the lateral aspect of the toe.

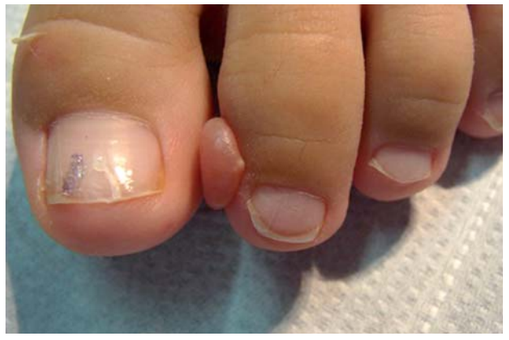

Fig 2 - idem.

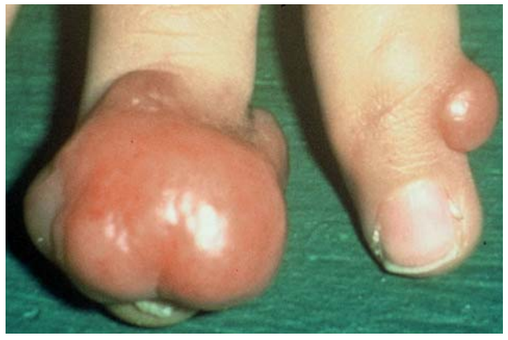

Fig 3 - Reye's disease covering the lateral and dorsal aspect of the nail plate. (Courtesy of R. Baran).

What is your attitude?

The clinical aspect is very evocative and the parents should be reassured.

This is an infantile digital fibromatosis, first described by Reye in 1965. This condition commonly appears during the first year of life, but may be present at birth in about one third of cases. This disease in not known to occur in adulthood. Clinically, it presents as 1 to 2 cm, firm nodules, single or multiple, pinkish to flesh coloured. It has a predilection for the third, fourth and fifth fingers (Fig 2). Apart from the digits, it has been reported in the oral cavity and the breast. When they reach the nail unit, digital fibromas may elevate or cover the nail plate, leading to dystrophy of the plate without its destruction (Fig 3). Histological examination of a punch biopsy reveals that the dermis is infiltrated by uniform spindle cells and collagen bundles arranged in interlacing fascicles. A characteristic diagnostic feature is the presence of eosinophilic cytoplasmic inclusion bodies, often indenting the nucleus.

Management of such lesions should be abstention of treatment as the recurrence rate is reported to be as high as 60%. As this condition is unknown in adults, this may suggest that it probably always regresses spontaneously.

Surgery should be proposed only for tumours with aggressive growth or resulting in functional problems (footwear, gait). A paper recently described a complete regression of the fibroma following intralesional injection of fluorouracil, as performed with keloids, without any recurrence during a 2-year follow-up. The side effects were not negligible: pain, purpura, ulceration and pigmentary disorders ...

COMMENTARY R. BARAN

Cryotherapy is an excellent treatment for Reye's infantile digital fibromatosis.

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The nail - What's new ? n°2

Continuing Medical Education

Robert BARAN

Nail involvement in psoriatic disease. What you should know.

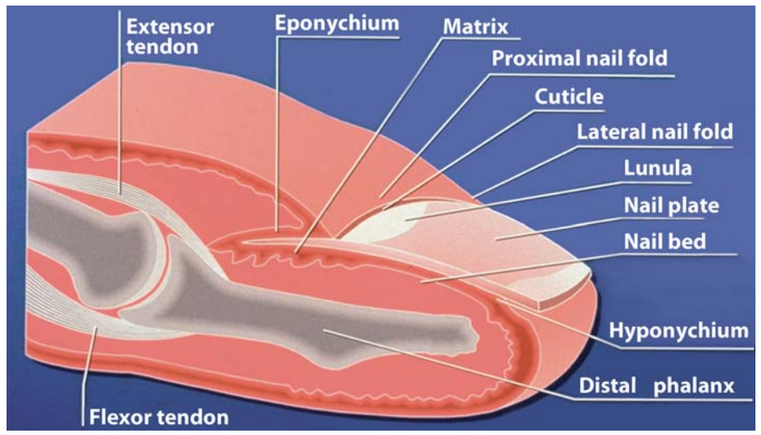

Fig 1 - Anatomy of the nail apparatus.

1. ANATOMY

1.1. The four epithelial structures of the nail

The nail plate is the permanent product of the nail matrix. Its normal appearance and growth depend on the integrity of several components: the surrounding tissues or perionychium and the bony phalanx form part of the structure of the nail apparatus or nail unit (Fig 1).
The nail is a semi-hard horny plate covering the dorsal aspect of the tip of the digit. The nail is inserted proximally in an invagination practically parallel to the upper surface of the skin and laterally in the lateral nail grooves. This pocket-like invagination has a roof, the ***proximal nail fold*** and a floor, the ***matrix*** from which the nail is derived.
The matrix extends approximately 6 mm under the proximal nail fold and its distal portion is only visible as the white semi-circular lunula, which is more developed on the thumbs. The general shape of the matrix is a crescent concave in its posterior-inferior portion. The lateral horns of this crescent are more developed in the great toe and located at the coronal plane of the bone.
The ventral aspect of the proximal nail fold encompasses both a lower portion continuing the matrix and an upper portion (roughly three quarters of its lengths) called the eponychium.
The germinal matrix forms the bulk of the nail plate.
The proximal element forms the superficial third of the nail, whereas the distal element provides its inferior two thirds.
The ventral surface of the proximal nail folds adheres closely to the nail for a short distance and forms gradually desquamating tissue, the cuticle, composed of the stratum corneum of both the dorsal and the ventral site of the proximal nail fold. The cuticle, which provides both the general form and the shape of the free edge of the nail, seals and therefore protects the ungual cul-de-sac (Fig 2)
The nail plate is bordered by the proximal nail fold which is continuous with the similarly structured lateral nail fold on each side. The ***nail bed*** extends from the lunula to the hyponychium. It presents with parallel longitudinal rete ridges.
This area, in contrast to the matrix is firmly attached to the nail plate. Colourless, but translucent, the highly vascular connective tissue containing glomus organs transmits a pink colour through the nail. Nail avulsion produces a denudation of the nail bed.
Distally, adjacent to the nail bed the ***hyponychium***, an extension of the volar epidermis under the nail plate marks the point at which the nail separates from the underlying tissue.

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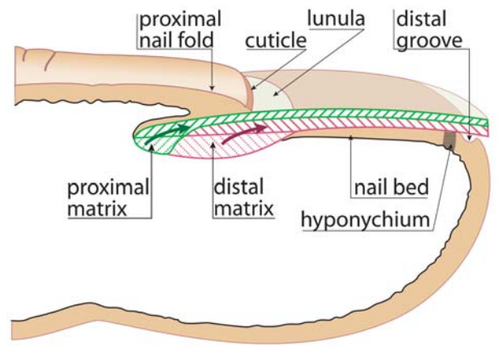

Fig 2 - The main structures of the nail apparatus and origin the nail plate

The distal nail groove, which is anteriorly convex separates the hyponychium from the finger tip.
Circulation of the blood in the nail apparatus is supplied by two digital arteries running along the digit wich give off branches to the distal proximal arches.
The sensory nerves which lead to the dorsum to the distal phalanx of the three middle fingers are derived from fine, oblique dorsal branches of the volar collateral nerves. Longitudinal branches of the dorsal collateral nerves supply the terminal phalanx of the fifth digit and also the thumb.
Among its multiple functions, the nail provides counter-pressure to the pulp that is essential for tactile sensation involving the fingers and for prevention of hypertrophy of the distal wall tissue produced after loss of the great toenail.
Histology recognizes the nail matrix and the nail bed that have no granular layer in contrast to the upper ventral aspect of the proximal nail fold and the hyponychium.
The hard keratin of the nail lies perpendicular to the nail growth axis and parallel to the surface of the nail bed.
Fingernails grow continuously on an average of 0.1 mm per day (3mm per month). Toenails form over a period of 12-18 months. Knowledge of growth rate is often helpful in establishing disease onset.

1.2. The nail a musculoskeletal appendage

The nail is part of a functional unit comprised of : the distal bony phalanx, several structures of the DIP (Distal Interphalangeal joint) extensor tendon fibres and the collateral ligaments, all forming the enthesis .

1.2.1. Enthesis

The Enthesis organ is the bony insertion point of the ligaments, the tendons and the articular capsules. It is composed of both (Fig 3)

- Soft tissue (ligaments, tendons and their fibrocartilages)
- Hard tissue (calcified fibrocartilage, the immediately adjacent bone of the underlying trabecular network).

1.2.2. Micro-anatomy

Histological images confirm the link between the different structures.
The extensor tendon in particular, continues its bony insertion by enveloping the root of the nail. The lateral ligament forms a network of integration which contributes to the attachment of the lateral edges of the nail. This virtual continuum of the structures of the conjunctive tissue merges with the thickened periostium of the distal phalanx,and with the numerous cutaneous ligaments joining the fat pulp to the skin.

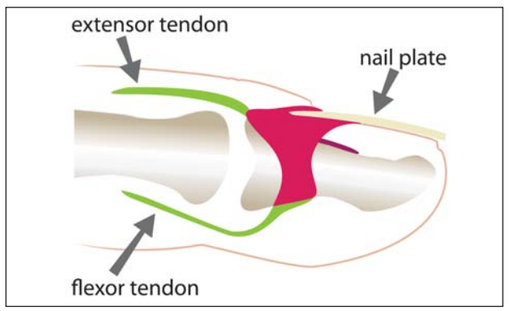

Fig 3 - Enthesis organ.

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2. PSORIATIC ARTHRITIS

Seronegative inflammatory arthritis of psoriasis show a preference for the DIP of the hands. The prevalence of PsA varies from 6 to 69%.
The frequency of the nail disease can be seen in 10 to 50% of psoriatic patients without arthritis but reaches 80% in cases of PsA.

2.1. From the microscope to the clinical exam

Taking into account the link between the extensor tendon and the nail, it is possible that the inflammation of this structure plays a key role in the pits of the nail. However, all the nail abnormalities do not necessarily depend on the enthesis network of the DIP and the nail . Therefore, subungual hyperkeratosis clearly results from a keratinocytic functional perturbation, as in other places in this disease.
On the other hand, the existence of a painful nail in psoriatic patients without arthritis allows for the hypothesis of a subclinical enthesitis as a major determining factor. The eventuality of a musculoskeletal origin of the pain deserves consideration, because onycholysis associated with pain of the nail bed is a common PsA and psoriatic abnormality, but observed in up to 50% of PsA cases.

2.2. Radiology, MRI, ultrasound and scintigraphy

2.2.1. The main **signs of radiology** are well defined (Fig 4 A).

- Joint erosions
- Pinching of the joint space
- Bone expansion, osteolysis
- And new bone formation at the central and peripheral enthesitis

2.2.2. With an **MRI** (Fig 4 B,C ; Fig 5 A, B) the bone oedema is commonly described as a characteristic of PsA allowing the diagnosis of osteitis which sometimes accompanies an enthesitis. It especially suggests a link between enthesitis and synovitis in the oedematous joins of PsA due to the presence of an inflammation, not only limited to the site of insertion but much more diffuse, involving the non-adjacent bone and the soft tissue, including synovium. Consequently, enthesitis appears as a common denominator between psoriasis and PsA and subclinical enthesitis can be the initial pathology, which consequently produces join synovitis by releasing a proinflammatory mediator.

2.2.3. The musculoskeletal ultrasound has been used to investigate synovial disease; enthesitis and sacro-illitis. This is the best choice for examining the soft tissue and the bone surface where new formations and erosions can be seen.

2.2.4. Isotopes during scintigraphic study have revealed a periarticular bone distribution in some cases of psoriasis without joint symptomatology.
These studies confirm the new hypothesis of infra-clinical disease in psoriatic individuals.
DIP disease is not exclusively linked to PsA but in this disease it shows the most characteristic signs i.e. nail involvement, (more common in cases of PsA than in common psoriasis) and joint involvement (almost never seen in the absence of nail disease).

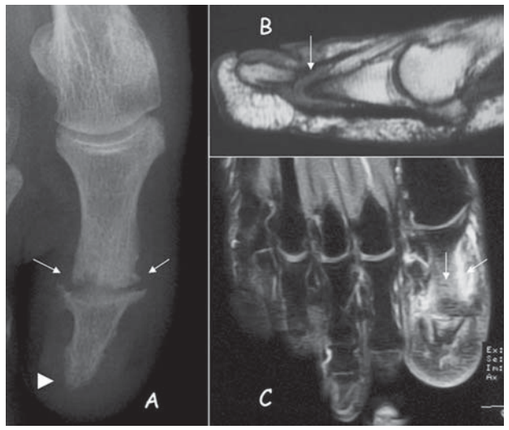

Fig 4
A- Typical psoriasis of the big toe (joint erosion and bone expansion in the DIP joint, acroosteolysis of the distal phalanx.
B- MRI. Sagital section T1, osseous destruction of the distal joint is clearly visible.
C- MRI. Axial section T1, gado fact sat: shows inflammation of the bone (osteitis) and soft tissues (enthesitis, periostitis, pseudo tenosynovitis) (Courtesy of F. Lapègue et al.,Toulouse, France).

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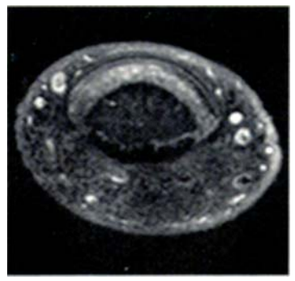

Fig 5A
Normal MRI of a distal phalanx. Axial section.

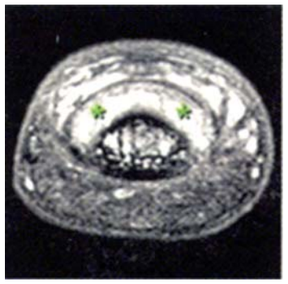

Fig 5B
PsA IRM. Axial section. (Courtesy of D. McGonagle, (UK) with permission of Wiley-Blackwell).

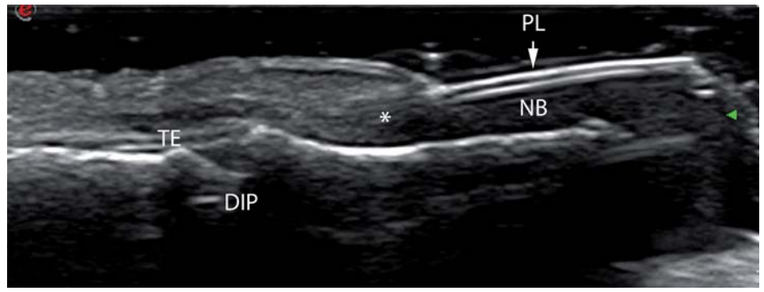

Fig 6A
Normal US Anatomy of the Nail (for comparison)
(Courtesy of X. Wortsman - Chile).

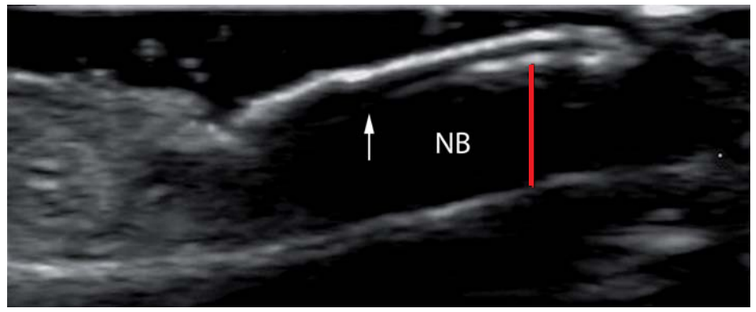

Fig 6B
Ultrasound (longitudinal view) shows loss of definition of the ventral plate (arrow) and thickening of the nail bed (red line).
(Courtesy of X. Wortsman - Chile).

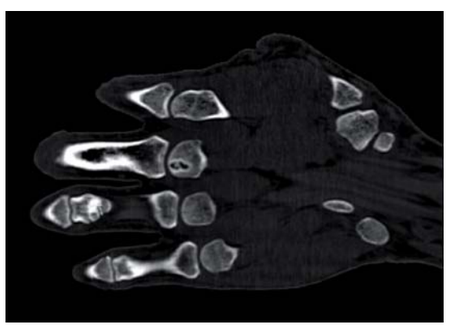

Fig 7
Tomodensitometry of a hand (Courtesy of F. Paycha. Nuclear Medicine Unit, Colombes, France).

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3. CLINICAL SIGNS AND THEIR ASSESSMENT

Psoriasis involves privileged sites of which the nails are part. The disease may even involve only the nail. An isolated finger may be diseased without any radiologic sign. Before treating and then assessing the efficacy, it is indispensible to measure the degree of the lesions and propose an method equivalent to PASI (Psoriasis Area and Severity Index). We have, therefore, imagined a method to apply to the nail which differs, by its precision and simplicity from the NAPSI (Nail Psoriasis Severity Index) created by the American Rich and Scher. Firstly, to score onycholysis the area involved should be calculated by dividing the nail in eight portions (Fig 8) where three horizontals lines divide the nail into four segments each of 25% and a vertical line divide each segment into two portions leaving small segments of 12,5%. Using this method of calculation it is easy to record the area of nail involvement as
1/ slight less than 25% ;
2/ moderate 25 to 50% ;
3/ severe more than 50%.

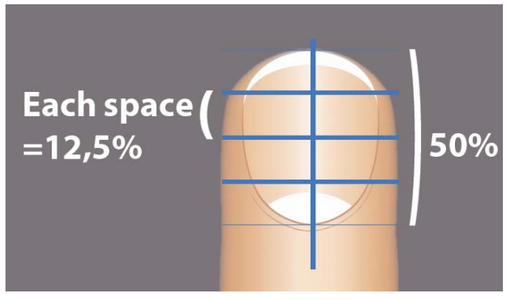

Fig 8 - Assessment of onycholysis.

Trachyonychia, leuconychia and oily spots may also benefit from this type of calculation.
Subungual hyperkeratosis may be evaluated with a kaliper as follows:
1/ slight less than 2 mm ;
2/ moderate 2-3 mm ;
3/ severe more than 3 mm.
The abnormalities of the nail surface such as pits and Beau's lines take into account their number.
Concerning the pits, for example, the number must be described and calculated in the following way:
1/ slight form less than 10 pits,
2/ moderate form between 10 to 20 pits,
3/ severe form more than 20 pits.

Beau's lines composed of adjacent pits which form a transversal groove can be evaluated in the same way:
1/ slight form only one transverse groove,
2/ moderate form 2 or 3 grooves,
3/ severe form more than 3 grooves.

The use of this assessment permits an estimation of the pathological degree of nail psoriasis in a simple and precise manner. It is easy to check the pathological variety of the subungual tissue distal to the lunula (dyschromia, onycholysis, subungual hyperkeratosis).
In conclusion, it is imperative to establish the score of the main signs (pitting, Beau's lines, subungual hyperkeratosis and onycholysis). The global score represents the addition of the scoring attributed to each sign, the maximum should not exceed twelve).

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4. TREATMENT

From a therapeutic point of view, the classical local treatments used alone or in association are:
- Corticosteroids
- Vit D3 derivatives
- Tacrolimus

Classical local treatments often have a limited efficacy because they are not adapted to the penetration of the actives, either in the nail bed or in the nail matrix, the main part being dissimulated in the nail cul-de-sac. However, it is possible to avoid this difficulty by intralesional injections alone in the matrix, or in both the matrix and the nail bed (such injections could be very painfull).
Recently good results were obtained with a 15% urea lacquer applied on the nail plate. Its use is not aggressive and offers an interesting and useful therapeutic alternative to the treatment indicated above.

If local treatment fails, patients could be treated with either radiations or classical systemic drugs. Radiations, such as PUVA therapy, very often lead to failure in contrast to soft radio therapy (10 to 50Kv), only in adults and without ever going above 10 Gy.
With classical systemic treatment using methotrexate, retinoids, cyclosporine A and fumarates, long term use may produce side effects. This explains the increase in biotherapy, derived from recombining DNA technology which can be classified into three main categories according to their action mechanism:
- Anti-TNF-α: infleximab, adalimumab and etanercept;
- Anti-T cells: alefacept,
- Anti-IL 12/23: ustekinumab and ABT 874.
These biotherapies generally give excellent results in nail psoriasis, but one should be aware of sometimes severe side effects, even if they are rare.

The future is opening onto optimal use of these biotherapies (association of sequential treatment, alternating of different drugs) in order to increase efficacy and reduce side effects. By controlling the treatment of psoriasis, we will reduce the frequency of relapse which otherwise would be inevitable. Finally the choice of treatment depends on the specificity of each patient and, as always, on the physician's choice.

Suggested reading

- Baran R. A nail psoriasis severity index. Br J Dermatol 2004; 150: 568-9.
- McGonagle D, Tan AL, Benjamin M. The nail as a musculoskeletal appendage – Implications for an improved understanding of the link between psoriasis and arthritis. Dermatology 2009; 218:97-212.

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notes

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