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'So many of our dreams at first seem impossible, then they seem improbable, then we summon the will, they soon become inevitable'.

Christopher Reeve

The existence of **Nail society of India (NSI)** is the culmination of collective dreams of many dermatologists with special interest in the Nail unit.

VISION

The **Nail society of India (NSI)** was established in February 2012, with the vision of encouraging and advancing the current knowledge and practices in Nail in health and disease.

MISSION

- To promote scientifically rational practice and research in the management of nail diseases including nail histopathology and surgical procedures of the nail unit.
- To educate physicians about advances in nail diseases, nail surgery and nail cosmetics.
- To organize scientific programs like conferences, CME's, workshops and trainings focusing on nail disorders and their management.
- To promote interaction among Specialists dealing with nail disorders in India and abroad.
- To publish newsletters, monographs, booklets, pamphlets or journal devoted to nail diseases.

The society plans to hold one CME/ workshop and one National Conference every year. **First CME on Nail Disorder**, held on 6th May, 2012 in Delhi, was a success as is evident by the fact that 127 delegates attended the meeting. **ONYCHOCON**, the first national conference on NAIL is being organized under the aegis of NSI in Bangalore under the dynamic leadership of Prof. S. Sacchidanand. In the coming years, NSI will offer grants to support research in basic sciences and clinical research in the field of nail disorders. To provide assistance to young clinicians, a mentorship program is also in the pipeline.

It's a moment of proud privilege for me to introduce the first official newsletter of NSI, **'ONYCHOSCOPE'**; a Biennial publication, which will feature an invited write up by the experts in the field, update on the main events, Photo-Feature /Onycho-Quiz and excerpts from the current literature. NSI nurtures the dream of starting a print journal dedicated to nail disorders in the near future.

I feel humbled to announce that the NSI member list is about to touch a modest three figure mark in its first year of inception. We already have a working website www.nailsocietyindia.com and you can visit and interact with us on facebook too.

I extend my heartfelt thanks to the office bearers, executive members from all across the country and esteemed members of NSI for their immense motivation, encouragement and relentless support. I am confident that the academic deliberations will help crystallize our thought process regarding the recent concepts of the so far neglected skin appendage i.e. NAIL. We look forward to your valuable contribution in our future endeavors.

Dr Archana Singal
President, NSI



Unique Nail Markers of Systemic Disease

BELUM SIVA NAGI REDDY, Prof. & HOD, DVL Department, Mamata Medical College, Khammam, AP

This article is aimed at briefly discussing the diagnostic utility of various morphological nail lesions which may go towards **suggesting** an underlying accompanying systemic disease.



Table-1: Nail changes in various systemic diseases

Nail changes	Important systemic associations
Clubbing	COPD, bronchogenic carcinoma, hepatic cirrhosis, IBD, CHF, endocarditic,
Koilonychias	Iron deficiency anemia, hemochromatosis, Raynaud's disease, occupational, digital ischemia
Onycholysis	Hyperthyroidism, sarcoidosis, Connective Tissue Diseases, occupational
Beau's lines	Severe systemic illness, coronary heart disease, measles, pulmonary embolism, renal failure and zinc deficiency
Yellow nails	Lymph edema, pleural effusion, immunodeficiency, bronchiectasis, rheumatoid arthritis, nephrotic syndrome, hypoalbuminemia,
Terry's nails	Cirrhosis, CHF, hyperthyroidism, adult onset DM
Azure lunula	Hepatolenticular degeneration, systemic drug ingestion (phenolphthalein, silver, zidovudine, cytotoxic agents).
Half-and-half nails	Renal failure, cancer therapy
Muehrcke's lines	Hypoalbuminemia, nephritic syndrome, liver disease, and malnutrition.
Mees' lines	Arsenic poisoning, Hodgkin's disease, chemotherapy,
Melanonychia	Drug induced, physiological in darker races, HIV infection, Addison's disease, B12 or folic acid deficiency
Splinterhemorrhges	Bacterial endocarditic, trichinosis, anemia, cirrhosis, diabetes, antiphospholipid syndrome, SLE, malignancies, psoriasis



Beau's lines in the thumb nail



Clubbing of two digits showing obliteration of the angle between the nail fold and nail plate.



Clubbing of two digits showing obliteration of the angle between the nail fold and nail plate.



Longitudinal melanonychia affecting multiple nails in a 30 year old male

Any assessment of nail changes is better carried out on the finger nails as those in the toenails are likely to be masked by alterations due to repetitive trauma.

CLUBBING

Schamroth's sign is an obliteration of the normal diamond-shaped space formed when dorsal sides of the distal phalanges of corresponding right and left digits are opposed¹. Clubbing can be a feature of hereditary or acquired diseases. Various pulmonary or cardiovascular diseases including lung malignancies, cystic fibrosis, congenital heart disease, endocarditis or arterio-venous malformations and fistulae could be responsible². It usually starts in the 4th or 5th finger. GIT disorders (celiac disease, cirrhosis, and inflammatory bowel disease), hypertrophic osteoarthropathy and thyroid acropachy are other reported associations.

ONYCHOLYSIS

It is uncommonly associated with systemic disorders like anemia, bronchiectasis, pellagra, vitamin C deficiency, thyrotoxicosis (Plummer's nail) etc.

BEAU'S LINES

Transverse linear depressions in the nail plate due to a **temporary disruption of normal nail growth**. Occasionally, they may also be caused by local injury or trauma to the proximal nail fold region. Beau's lines are seen with coronary heart disease, measles, pulmonary embolism, pneumonia, renal failure and zinc deficiency and generally manifest a few

months after the acute inciting event. Occupational Beau's lines have been reported due to microwave radiation injury.

TRANSVERSE WHITE BANDS

It is a common clinical sign, frequently following repeated microtrauma to the nails as in aggressive manicuring. Also occur as a result of systemic disease presenting in the form of **Mee's lines** (Arsenic poisoning) or **Muehrcke's** paired white bands. Muehrcke's lines are narrow transverse white bands occurring in pairs and represent an abnormality of nail bed. As the lesion is in the nail bed, they disappear when the nail is pressed. Also, they do not move with the growth of the nail plate. These characteristics help distinguish Muehrcke's lines and Mees' lines. Muehrcke's lines are seen in patients with hypoalbuminemia (serum albumin less than 2 g per dL).

LONGITUDINAL MELANONYCHIA

Longitudinal pigmented bands have a racial predilection apart from causes like drug ingestion, lichen planus, frictional trauma, HIV infection, Addison's disease and B12 or folic acid deficiency. Longitudinal pigmented bands are a diagnostic challenge as subungual melanoma needs to be ruled out.

SPLINTER HEMORRHAGES

Thin, linear, red or brown color extravasations from the longitudinally oriented blood vessels of the nail bed. Trauma is the most common cause, however, systemic illnesses like sub acute bacterial endocarditic, trichinosis, anemia, cirrhosis, diabetes, antiphospholipid syndrome, septicemia, SLE,

hypertension, Buerger's disease, Raynaud's diseases, drug reactions or HIV infection may be associated. Occupational splinter hemorrhages are common due to mechanical trauma.

KOILONYCHIA (Spoon shaped nails)

Commonly seen in ischemic digits. **Iron deficiency anemia** and occupational koilonychias are common causes of koilonychias.

LUNULAR DYSCROMIAS

Changes in the color of the lunula, either in a spotted or a uniform pattern. This may be red, blue, purple, yellow or black. Blue or azure lunulae occur commonly due to systemic drug ingestion (phenolphthalein, silver, zidovudine, cytotoxic agents) and Wilson's disease (hepatolenticular degeneration). Red lunulae can occur in various CVS, GIT, and endocrinal, cerebrovascular or rheumatologic disorders. The proximal portion of the nail bed can turn white, obliterating the lunula and giving a half brown and half white appearance, which is known as half-and-half nails. These are distinct markers of chronic renal failure. Terry's nails are seen in severe liver disease, such as cirrhosis, congestive cardiac failure, and adult onset diabetes mellitus. Herein, the proximal portion of the nail is light pink or white with ground glass appearance and the lunula is obliterated.

YELLOW NAIL SYNDROME

It is a triad of yellow nails, lymph edema and respiratory disease, seen in chronic bronchiectasis, sinusitis, pleural effusion, internal malignancies, immunodeficiency syndromes and rheumatoid arthritis. It is generally a result of protein leakage from increased micro vascular permeability, accounting for its common association with hypoalbuminemia, pleural effusion, and lymph edema.

REFERENCES:

1. Lampe RM, Kagan A. Detection of clubbing – Schamroth's sign, *ClinPediater*, 1983,22:125.
2. Stone OJ. Spoon nails and clubbing. *Cutis* 1975, 16: 236-250.
3. Dawber R. Occupational koilonychias. *ClinExpDermatol* 1977, 2: 115-120.
4. Baran R, DawberRPR. Physical signs, In Baran R, DawberRPR. Editors. *Diseases of the nails and their management*. 2nded, Oxford: Blackwell Scientific publications, 1994, p 35-80.

Photo Quiz

15 yr old male patient visited my clinic, with bilateral thumb nail deformity (as seen in figure), of several weeks duration.

On examination there were sharp closely spaced horizontal grooves, on both of thumb nails, without any hyperkeratotic debris or pitting. Rest of the finger and toe nails were found to be normal.

Question 1- What is your diagnoses?

Question 2- List the most common differential diagnosis for this condition.



Report on First CME, 6th May

The **very 1st Continuing Medical Education Program on Nail Disorders** was conducted by the **Nail Society of India**, on Sunday, 6th of May, 2012 at Delhi. The program was conducted under the aegis of IADVL-Delhi State Branch. This was the very first effort by the NSI aimed at developing and disseminating evidence based approach towards the treatment of nail disorders.

The event proved to be a major draw, with a total of 127 delegates from Delhi and surrounding states, attending the deliberations. It saw participation of almost all the founder members of NSI including Dr Hema Jerajani, Dr AJ Kanwar, Dr S. Sacchidanand, Dr Raghunatha Reddy, Dr B B Mahajan and Dr Manas Chatterjee. The residents of University College of Medical Sciences left no stone unturned in ensuring flawless execution of the show.

The academic deliberations started on time and finished sharp at 4.30 PM. The sessions were an interesting mix of medical and surgical onychology. The surgical aspects were covered by all the speakers with excellent, educative and informative videos.

The proceedings started with Dr Neena Khanna, Professor, AIIMS' lecture on varied **Clinical manifestations of nail psoriasis** and its pathogenesis. Dr Archana Singal, Professor, UCMS AND President NSI, dwelled on the **Role of nail biopsy and histopathology** as a diagnostic tool in psoriasis. Lesser known facts about **Medical and surgical management of nail psoriasis** were discussed by Dr Chander Grover, Assistant Professor, UCMS and Secretary, NSI.

A brief formal inaugural ceremony was followed by a **Panel discussion on Management of difficult nail conditions** (moderated by Dr Atul Kocchar, Senior Specialist, MAMC). Dr BB Mahajan, Professor and Head, Govt medical College, Faridkot, deliberated on the **Efficacy of intralesional methotrexate and ciclosporin** in the treatment of nail psoriasis. Dr V Ramesh, Professor and Head, VMMC highlighted the **Role of topical antimycotics in the treatment of SWO**. Dr Somesh Gupta, Associate Professor, AIIMS, presented a practical approach to **Management of melanonychia**. Dr Sacchidanand, Professor and Head, Bangalore Medial College discussed **Twenty Nail Dystrophy** at length. The latest **advances in the field of Onychomycosis Diagnosis and Treatment** were summarized comprehensively by Dr Deepika Pandhi, Associate Professor, UCMS and Dr Vijay Gandhi, Associate Professor, UCMS.

The post lunch sessions had an interesting mix of discussion on pathogenetic factors, medical and surgical approach towards **Chronic paronychia and Ingrown toe nail**. These were lucidly presented by Dr Sujay Khandpur, Additional Professor, AIIMS and Dr Raghunatha Reddy, Professor, PESIMSR, Kuppam (Ingrown toe nail) and Dr Shikha Bansal, Specialist VMMC and Dr Vineet Relhan, Assistant Professor, MAMC (Chronic paronychia). Chronic paronychia being a manifestation of hand dermatitis with superimposed Candida in some was the key learning of the session. The show ended with a brilliant presentation on **Nail Cosmetology**, by Dr Soni Nanda, Consultant Dermatologist, Max Superspeciality Hospitals, this being conventionally a less explored territory by the dermatologists.

A compendium of scientific deliberations for the day is appended below. **Viva NSI!!!**

Scientific Contents (CME on Nail Disorders)

NAIL PSORIASIS: HOW TO DIAGNOSE (ROLE OF NAIL BIOPSY)

Dr Archana Singal, Professor, UCMS, Delhi

Nail psoriasis is commonly (53-80%) seen in patients with psoriatic arthritis especially when the arthritis affects the fingers and toes. 1- 5% of patients have isolated psoriasis of the nails without accompanying skin lesions. Nail psoriasis clinically manifests as subungual hyperkeratosis, nail pitting & nail discoloration (oil drop sign), distal onycholysis and dystrophic nails. Differential diagnosis of nail psoriasis thus includes onychomycosis, alopecia areata, lichen planus, pityriasis rubra pilaris, idiopathic trachyonychia and punctate keratoderma.

Nail biopsy is indicated in patients with isolated nail disease without cutaneous lesions, repeated KOH and culture negative onychomycosis and to establish the possible etiology of twenty nail dystrophy. The type of nail biopsy largely depends on the location of nail pathology in the nail unit. In majority, **nail bed including nail plate punch biopsy is sufficient**. In addition to the **appropriate patient selection**, adequate knowledge of **nail anatomy, perfect anesthesia & hemostasis and proper instrumentation** is necessary. **Punch biopsy** is obtained by taking out a cylinder containing nail bed and nail plate. Once obtained, the biopsy specimens are preserved overnight in 10% buffered formalin to fix the tissue. Nail sample is then kept in 3% phenol for 5 days to achieve a softened nail plate to facilitate smooth cutting of 5- μ m sections. All sections are stained with H&E and Periodic acid-Schiff (PAS) stain to look for fungal elements.

Hanno et al have proposed certain **histological criteria** for the diagnosis of psoriasis viz **Major criteria** (Presence of PMN's in the nail bed epithelium or adherent parakeratotic nail plate) and **Minor criteria** (Hyperkeratosis and parakeratosis, serum like exudate in horny layer, focal changes in the granular layer and psoriasiform hyperplasia of nail bed epithelium with dilated subepithelial blood vessel). The criterion of negative fungal elements was added by Grover C et al. Complications occur infrequently and may include secondary infection, excessive bleeding, persistent pain and swelling and rarely deformity.

Hence, Nail biopsy is a basic and safe procedure with an acceptable cosmetic outcome, the essential pre-requisites being proper indication, good technique, representative biopsy site & a trained pathologist, nail plate and nail bed biopsy can provide use useful information to document the diagnosis of nail psoriasis.

NAIL PSORIASIS: HOW TO MANAGE (MEDICAL AND SURGICAL THERAPY)

Dr Chander Grover, Assistant Professor, UCMS, Delhi

Poor efficacy of available treatments; questionable long term compliance; difficulty in topical drug delivery; toxicities of systemic agents and slow speed of nail growth make nail psoriasis difficult to treat. Prior to treatment, one should evaluate nail unit area affected so as to choose targeted therapy. For example, **pitting suggests matrix involvement and oil drop sign suggests nail bed involvement and should be treated accordingly**. A baseline scoring of severity **with NAPS I** is ideal to evaluate treatment outcome.

General measures include avoiding excessive cutting or removing debris. Patient should be advised to protect from water and irritants and apply emollients liberally.

Topical treatment options include topical corticosteroids, intralesional steroids and vitamin D analogues. Potent or very potent **topical corticosteroids**, applied after clipping detached nail plate, once or twice daily improve both bed and matrix features. Side effects include telangiectasia and atrophy. Clobetasol propionate 0.05% cream for 12 wks has been reported to produce up to 82% improvement. Advantages of TCS include low cost, once daily application, lower rates of adverse events with newer agents and intermittent application with lacquers (clobetasol). High rate of recurrence is seen. **Injectable Triamcinolone acetonide** (2.5-10 mg/ml) is a useful agent administered at 3-4 wks interval, for 5-6 months for fingernails, producing good response in 70-90% patients. For matrix disease, injection needs to be given in proximal nail fold, whereas for nail bed, more distal insertion is required. **Calcipotriol**, twice daily, has shown significant efficacy in hyperkeratosis. It can be used in combination with clobetasol propionate. **Topical ciclosporin, tazarotene (0.1% cream or gel), 5-fluorouracil and Anthralin** have also been evaluated.

Systemic Treatment may be required in some cases. Retinoid, primarily **Acitretin** (0.25-0.5mg/kg/d) have produced satisfactory improvement. Side effects include leukonychia, pseudopyogenic granuloma, brittle nails and paronychia. **Ciclosporin** is considered as a second line treatment option. Among biologics, **Alefacept** has produced upto 50% improvement in NAPS I in 12 wks, with no significant adverse effects. **Infliximab** has produced extremely beneficial results, however, infusion reactions are common. Rapid response with **Etanercept** 50mg/wk has been reported with a high degree of safety. No published studies of **methotrexate's** efficacy are available, though it is commonly accepted as beneficial. Low dose MTX (5 mg/w) has been reported efficacious for multiple nail involvement.

Photochemotherapy has been reported to improve onycholysis, salmon patches and proximal paronychia, with no effect on pitting. **Pulsed dye laser** (595nm) has produced significant improvement in NAPS I. **Cosmetic camouflage** can help minimal pitting (nail buffing to even out, or placing a gel layer) or onycholysis. For gross changes, avoid cosmetic measures altogether.

To summarize topical can be used for mild changes or exclusive nail psoriasis. **Systemic therapy** is reserved for extensive disease, failure of topical or severe disease. Combination therapies should always be considered.

HOW I MANAGE RECALCITRANT NAIL PSORIASIS?

Dr. B. B. Mahajan, Prof & Head, GMC, Faridkot

Nails in psoriasis usually remain recalcitrant to treatment. Best option left is intramatrix injections.

Procedure: Using an insulin syringe, needle is inserted from lateral angle of proximal nail fold into proximal nail matrix. 0.05 ml is injected from each side of the nail in a V shape. Loss of resistance and blanching of lunula indicates that injection is being given in the nail matrix. Maximum of 0.1 ml (4U of insulin syringe) can be injected per nail. Pre and post procedure evaluation is done with NAPS I scoring

Injection Triamcinolone 10mg/ml gives excellent results intramatrixly. Other drugs like, methotrexate and cyclosporine can also be used. **Inj. Methotrexate 25 mg/ml** demonstrated comparable efficacy. **Inj. Cyclosporine 50 mg/ml** may produce side effects like post injection numbness, persistent pain in digit, proximal onycholysis, subungual haematoma, splitting of nail plate, distortion of nail plate and pain on intramatrix injection.

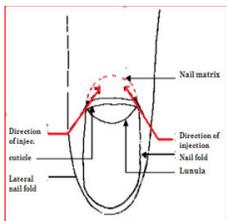
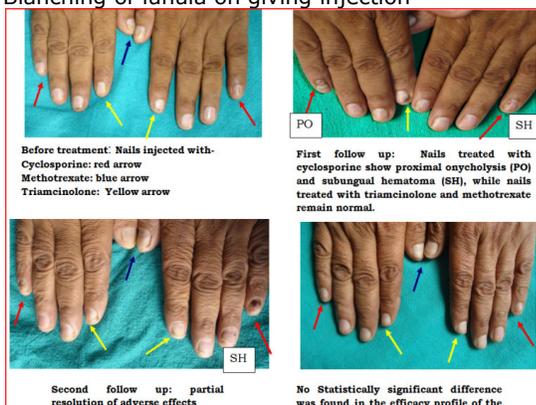


Fig 1: Procedure being done

Fig 2: Blanching of lunula on giving injection



To conclude, Intramatrix injection of the drugs like methotrexate seems to be the most ideal choice, being a cost effective, simple OPD procedure and result oriented. In future, new biological agents like, etanercept, alefacept etc can also be given intramatrix for recalcitrant nail psoriasis.

ONYCHOMYCOSIS AS LEUCONYCHIA

Dr V RAMESH, Head, VMMC and Safdarjung Hospital

Leuconychia of the nail may be confused with superficial white onychomycosis. Suspicion and simple laboratory tests can solve this issue. Though this type of onychomycosis is common in toe nails, the fingernails too can be affected. A simple way to clinically suspect this condition is **to scrape the nail surface**. In leuconychia this reveals a normal nail surface whereas in (SWO) a chalky white surface is easily revealed on scraping.

Direct examination under **KOH** would help to make the diagnosis confidently. It is the light diffraction that gives the white colour in leuconychia and in SWO the fungal colonies are responsible for the whiteness.

TRACHYONYCHIA (ROUGH NAILS)

Dr. S. Sachidanand, Prof. & HOD, BMCRI, Bangalore

Twenty nail dystrophy is brittle, thin nails, with excessive longitudinal ridging and superficial pitting. Cuticle is usually hyperkeratotic and ragged. Depending on the severity, it is possible to distinguish two clinical varieties of trachyonychia: a severe type, characterized by **opaque**, sandpaper nails, and a mild type characterized by **shiny** nails with superficial ridging and diffuse pitting. Koilonychias can be seen in both types.

Associated diseases **Vitiligo, atopic dermatitis and alopecia areata**. As Trachyonychia is a disease of the nail matrix, thus a pathological diagnosis requires a nail matrix punch or a longitudinal nail biopsy (LNB). The most common histopathological feature associated with trachyonychia is spongiosis and exocytosis of the inflammatory cells into the nail epithelia.

Trachyonychia can be seen in patients of lichen planus,

and demonstrate similar pathologic changes as in the skin. Trachyonychia in the setting of psoriasis has more thickening of the nail plate as opposed to the thinning noted in LP.

Treatment: Tazarotene gel 0.1% has been tried. Topical chemotherapeutics (5% 5-FU cream) have also been used in psoriatic trachyonychia, as short interval applications. This treatment is limited by periungual irritation. Psoralen plus ultraviolet A (PUVA) has been effective in one patient with TND who was treated for seven months at a dosage of 0.7/1.4 J/cm² three times per week for 7 months.

Intralesional injection of triamcinolone into the proximal nail fold at a concentration of 2.5-10 mg/ml has been shown to be effective. Patient compliance with treatment continuation is poor secondary to pain. Successful combination would be intra-matrix steroids administered under general anesthesia with ketamine and oral griseofulvin for six months. The griseofulvin is believed to play an anti-inflammatory role in patients with trachyonychia associated with lichen planus and is best paired with intra-matrix steroids.

Systemic retinoids are another treatment option for trachyonychia, and both acitretin and etretinate have been reported as being useful. More aggressive therapy in the form of cyclosporine A has been used. Vitamin supplementation of biotin at 20 mg per day has been successful in treating

Conclusion: Trachyonychia is a chronic clinical condition that may be idiopathic or associated with conditions like alopecia areata, psoriasis, and LP. While the histopathological findings have been well documented, the diagnosis of trachyonychia can most often be made based on the clinical symptoms. The most effective therapy has not yet been universally accepted, but mostly it improves spontaneously and treatment may not be necessary.

ONYCHOMYCOSIS: WHAT'S NEW IN THE DIAGNOSIS?

Dr Deepika Pandhi, Associate Professor, UCMS, Delhi

KOH and culture-Specimen should be collected when patient is off anti-fungals for 2-4 weeks. Separate samples should be taken from finger and toes; full thickness clipping should be obtained with a 2 mm curette or scalpel blade, and outer debris should be discarded. Fine shaving or clippings are preferred. Ideal collection sites are: **DLSO**- nail bed as proximal as possible after distal part is pared and ventral side of nail is curetted; **PSO** - proximal nail bed close to lunula; **SO**-friable leuconychia areas over the nail plate; **Endonyx and TDO** - nail clipping or punch biopsy. Other techniques of collection include **vertical drilling** and **proximal horizontal drilling**. Vertical drilling is the more accurate diagnostic method, causes less discomfort but results in a deformity.

Direct microscopy with 10-30% KOH with 5% glycerol is a low cost, rapid, accessible test. Other options include 20% KOH and 36% DMSO. **Special Stains** like Chlorazol black E, green-blue Parker's blue ink, Calcofluor white may improve the sensitivity. Fungal culture has high false negative rates, long incubation, risk of contamination and growth does not confirm pathogenicity. For NDM two consecutively positive fungal culture and KOH remain the gold standard tests.

Polymerase chain reaction (PCR) is a rapid, stable, accurate and versatile test. The specificity is high (100%) and comparable to microscopy (86.4%) and culture (100%). Further, it could distinguish dermatophytes, yeasts, molds in 8 hours. It remains a complementary method in diagnosis.

Nail biopsy using PAS is the **current gold standard diagnostic test**. It can distinguish between dermatophytes,

yeast and NDM and differentiate from psoriasis, lichen planus. **Immunohistochemistry** employs antibodies to specific fungi which are rendered visible by DIF or immunoperoxidase. The disadvantage is the paucity of available antibodies that include anti-*Trichophyton Sp*, *Candida Sp*, *Aspergillus Sp*. However the advantage is that it can pick up multiple species and assess the fungal load with image analysis.

Newer imaging techniques include **confocal laser scanning microscopy (CLSM)** that reconstructs 3d structure, is fast, accurate and allows survey of intact nail plate. **Scanning electron microscope** and **Phase contrast hard X-ray microscopy** are other diagnostic tools.

RECENT ADVANCES IN MANAGEMENT OF ONYCHOMYCOSIS

Dr Vijay Gandhi, Associate Professor, UCMS, Delhi

The currently approved topical & systemic therapies are constrained by poor penetration in nail plate unit, long duration of treatment and low efficacy. The penetration of topical agents can be increased by increasing porosity of nail plate by mechanical (abrasion, avulsion), chemical (etching with tartaric and phosphoric acid) and surgical (surgical avulsion of nail plate) methods. A new technique called microporation is performed by a patented device Pathformer with controlled microdrilling of nail plate. Newer advances to increase penetration include **iontophoresis** using electric current and **phonophoresis** using Ultrasonic waves to enhance penetration of topical antifungal agents. **Photodynamic therapy** with topical ALA is under trial. Newer topical antifungals like **oxaboroles** (AN2690) and **Arylguanidines** (Abafungin) with newer mechanisms of action are undergoing advanced trials.

Nanotechnology uses encapsulated antifungal agents has been used for increased penetration and efficacy. Newer oral antifungals include **Posaconazole, pramiconazole and Ravuconazole** have increased therapeutic efficacy and wider spectrum of action. **Lasers** including Noveon laser (870nm & 930 nm), Pinpointe foot laser (Nd: Yag at 1064 nm) are currently approved for treatment.

MANAGEMENT OF INGROWN NAILS

Dr Raghunatha Reddy R, Professor, PESIMSR and Mathapitha Polyclinic, Bangalore

Ingrowing nails (unguis incarnatus) or onychocryptosis is a common problem in which part of the nail plate penetrates the lateral nail fold groove. It is **classified into four stages** depending upon the severity and clinical manifestation. It can be managed by both non-surgical and surgical interventions. Surgery is indicated if patient has pain and functional disability; for recurrence, relapse or iatrogenic nail disorders; and when conservative treatments have failed.

Non surgical management strategies: Insert a small ball of sterile cotton wisp, dental floss, or semicircular malleable (soft) plastic tube, underneath the ingrowing toe nail. Other techniques include nail wiring, angle correction technique, acrylic artificial nail and a nail brace

Surgical Method: Simple nail avulsion alone without matricectomy leads to high recurrence rates of up to 70%. *The following techniques are used in the surgical management of the ingrown nail depending on the stage of the disease and expertise of treating dermatologists.*

Excision of spicule and partial matricectomy is advocated for individuals with a Stage-I ingrown toenail affecting the nail plate without hypertrophy of the nail fold. Preferably done in adults or elderly patients and in diabetics, in whom tissue regeneration capacity is reduced and recurrence rate is less. It

consists of excision of affected portion of nail plate followed by partial mechanical matricectomy (with curette or scalpel).

Partial Chemical matricectomy: Phenol-Alcohol technique involves excision of affected portion of toe nail and phenol partial matrixectomy This technique is indicated in onychocryptosis affecting the nail plate with hypertrophy of the nail fold of less than 3 mm (stage-I and IIa) The other agents used are sodium hydroxide and trichloroacetic acid. Other Options for destruction of the nail matrix, as well as for destruction of granulation tissue, include electrocautery, radiofrequency surgery and carbon dioxide laser ablation.

Wedge resection of the toenail and nail fold is done for hypertrophy of the nail fold exceeding 3 mm in thickness. It involves complete removal of nail plate and debridement of granulation tissue, after which wedge-shaped ellipse of skin and subcutaneous tissue lateral to the affected nail fold.

Total Matricectomy is indicated for stage IV disease and involves nail plate avulsion followed by total matricectomy either by surgical excision or chemical cautery. CO2 laser, Er: YAG laser, radiofrequency ablation and electrocautery are other techniques employed for matricectomy.

CHRONIC PARONYCHIA-WHY IT OCCURS?

Dr. Shikha Bansal, Specialist, Safdarjung Hospital, Delhi

Chronic paronychia is an inflammation lasting for more than 6 weeks and involving one or more of the three nail folds. General complaints are redness, tenderness, swelling, oozing and thick, discoloured nails. Morphologically it is characterized by induration and rounding off of the paronychium recurring episodes of acute eponychial inflammation and drainage.

Causes: It commonly affects housewives, cleaners, laundry workers, food handlers, cooks, dishwashers, bartenders, chefs, nurses, swimmers, diabetics and patients on HIV-ART.

Chronic paronychia has a complex pathogenesis producing multifactorial damage to cuticle, exposed nail fold and groove. **Is chronic paronychia an eczema or infection?** Previously it was believed to be caused by *Candida*. However, recent data reveals that it is a form of **hand dermatitis** caused by environment exposure. Henceforth, **Chronic paronychia is not a mycotic disease but an eczematous condition** with a multifactorial aetiology. For this reason, topical and systemic steroids may be used successfully whereas systemic antifungal are of little value. Tosti et al reported that topical steroids are more effective than systemic antifungal in the treatment of CP.

Tacrolimus 1% ointment versus betamethasone 17-valerate cream presented statistically significant improvement when compared with those applying just emollient, confirming allergens and irritants have indeed an important contribution to the pathogenesis of chronic paronychia.

Pathogenesis of chronic paronychia: Repeated bouts of inflammation and fibrosis of nail folds causes them to round up and retract thereby exposing the nail grooves. **This loss of an effective cuticle seal** leads to a persistent retention of moisture, infective organisms and irritants within the grooves, in turn exacerbating the acute flare-ups. This vicious cycle goes on compromising the ability to regenerate the cuticle. The inflamed and fibrosed PNF progressively loses its vascular supply leading to failure of medical treatment.

Rare causes of chronic paronychia include Infections (Bacterial, mycobacterial, or viral) metastatic cancer, subungual melanoma, squamous cell carcinoma, Raynaud disease. Benign and malignant neoplasms should always be excluded when chronic paronychia does not respond to conventional treatment. Chronic paronychia is also a common manifestation of papulosquamous disorders like psoriasis,

bullous disorders or drug toxicities from medications such as retinoids, epidermal growth factor receptor inhibitors (cetuximab), and protease inhibitors.

Differential diagnoses include squamous cell carcinoma of the nail, malignant melanoma or metastases. The clinician should consider the possibility of carcinoma when a chronic inflammatory process is unresponsive to treatment.

MANAGEMENT OF CHRONIC PARONYCHIA

Dr Vineet Relhan, Assistant Professor, MAMC, Delhi

Chronic Paronychia results from multifactorial damage to the cuticle that exposes the nail fold & the nail groove.

Management includes preventive measures, medical and surgical therapies. **Preventive measures** include avoidance of exposure to contact irritants, allergens and moisture, use of gloves and application of moisturizers after hand washing. Cuticle should not be traumatized by trimming/cuticle removers.

Medical Management includes Topical steroids combined with antifungals, I/L steroids, systemic antifungals, topical and systemic antibiotics and tacrolimus (0.1%) ointment. Medical therapy should be continued for 3-6 wks. **Surgical Management** is indicated in medically non-responsive and recalcitrant cases. Techniques include - En bloc excision of PNF, en bloc excision with nail plate removal, eponychial marsupialization and Swiss Roll Technique.

En bloc excision of PNF: After digital anesthesia and tourniquet application, a free septum elevator (spatula) is inserted into the proximal nail groove followed by full thickness excision of the PNF < 3mm in size (extending up to the lateral nail folds symmetrically) producing a gently sloped wound. Wound is dressed daily for 4-7 days with adjunctive oral antibiotics till the appearance of healthy granulation tissue (7-10days) followed by secondary intention healing. By 6 weeks, newly epithelialized PNF complete with a cuticle generally regenerates. With appropriate post-op precautions, cure rates of 50-70% can be achieved.

En bloc excision of PNF with nail plate removal:

Combining En bloc excision of PNF with additional removal of nail plate has shown improved results. **Eponychial Marsupialization:** A crescent shaped symmetric incision is made proximal to the distal edge of the eponychial fold along its curve with a No. 15 blade (1mm proximal to the distal edge of the eponychium) leading to exteriorization of the infected matrix and drainage. Wound is packed with gauze and epithelialization occurs over the next 2-3 wks.



Chronic Paronychia Crescent shaped excision of PNF

Swiss Roll Technique: Nail fold is elevated by making a symmetric incision using no. 15 scalpel blade and reflected proximally over a non adherent dressing that is rolled like a Swiss roll and secured to the skin with 2 anchoring non-absorbable sutures. Dressing is opened after 48 hours to clean the wound or left in place for 7 days. Nail fold is allowed to fall back to its original position and heal by secondary intention.

NAIL COSMETICS

Dr Soni Nanda, Consultant Dermatologist, Max Hospital

With the increasing use of nail cosmetics, knowledge of nail cosmetics is becoming more and more important for a dermatologist. Improperly done **manicure**, a procedure which is a monthly ritual for many patients can lead to ingrown nails, paronychia and Beau's lines. Corners of nails should be left untouched, plastic cuticle pusher is used instead of metallic, cuticles are not cut; properly sterilized instruments are used.

The base coat of **Nail polish** helps to fill irregularities, giving uniform natural color and top coat adds gloss & prevents premature chipping. 7% thermoplastic resin (Toulene Sulphonamide Formaldehyde Resin) used as adhesive is responsible for majority of allergic reactions seen. Hypo allergic nail polishes have alkyl polyester resins instead. It is a myth that prolonged use of nail polish leads to nail brittleness. In fact, it gives moisturization. It can be used as an adjunct treatment for brittle nails. Base coat could be used to camouflage mild pitting, ridging or rough nail surface. Prolonged use can lead to yellow / red discoloration which fades in 14 days. Nail keratin granulations simulates SWO. This can be prevented by removing the old nail polish before applying fresh coat. Also it leads to increased numbers of bacteria on fingertips. Contact Dermatitis, incidence of 1-3%, is seen. Nail polish removers (acetone based) cause dryness.

Nail moisturizers are creams/ lotions containing occlusive's (petrolatum or lanoline), humectants (glycerin, propylene glycol), proteins, fluorides (ammonium hexafluorophosphate) & silicium. These should be applied under occlusion at bedtime for minimum 3 months.

Artificial Nails are being very commonly used for purely cosmetic purposes. These are more durable and nail polish lasts much longer & does not chip. **Sculptured Nails** can be acrylic, gel or nail wraps (silk, linen, and fiberglass). Acrylic nails are losing popularity because these look less natural; applications involve strong chemicals & fumes and are not advisable in pregnancy. These nails can look thick & artificial.

Gel nails, currently the most popular type of sculptured nails use UV radiation for polymerization & hardening. These look more natural & glossy, are safer, more eco-friendly and procedure causes no fumes. But they don't last long, are less durable and cost more.

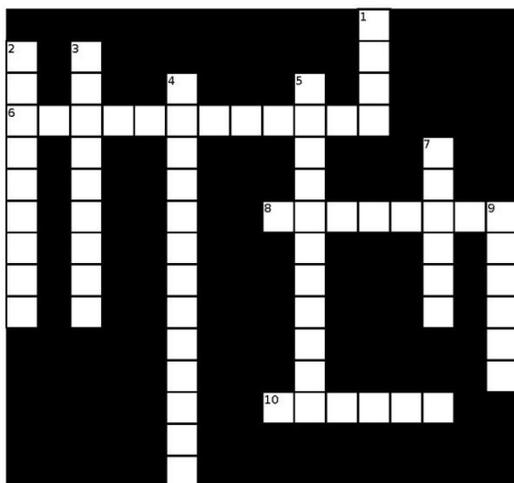
Sculptured nails can lead to paresthesias, eczematous reactions, onycholysis, temporary & permanent nail loss, contact dermatitis, onychomycosis & paronychia (apply thymolize under free edge), thin & brittle natural nail, increased risk of transmitting bacteria (higher microorganism counts)

Nail cosmetic if used judiciously could be an effective adjunct to medical treatment in certain nail conditions like trichotillomania, twenty nail dystrophy, pitting, brittle nails etc. We need to customize the available options according to the needs of our patients.



Nail Maze

By Dr Shikha Bansal, Specialist, Safdarjung Hospital, Delhi



Based on Nail Terminology

Down

- 1** Stripes – Transverse white stripes due to inorganic arsenic
- 2** Isolated large pit which may produce a localized full thickness defect
- 3** Fibrotic band of tissue fusing proximal nail fold with nail bed and matrix seen in Lichen planus
- 4** Nail plate dystrophy characterized by transverse splitting into layers at or near the edges
- 5** Reverse curvature in transverse and longitudinal axis
- 7** Intensely painful, a characteristic vascular nail bed tumor
- 9** The nail in this disorder show characteristic red and white longitudinal streaks often terminating in V shaped notch

Across

- 6** Associated with tuberous sclerosis. Present at puberty as periungual fibro as
- 8** Angle found at junction between nail plate and proximal nail fold
- 10** A patch-defined as lesions of psoriasis in nail bed

Please mail your answers to nailsocietyofindia@gmail.com
Names of the first three winners will be published in the next issue of the newsletter. Exciting prizes to be won!

Answer to Photo-Quiz

HABIT TIC DEFORMITY

This patient has a habit-tic deformity, a relatively common nail disorder. It is caused by the conscious or unconscious rubbing and picking of the proximal nail fold and cuticle area. Habit-tic deformity is most often found on the thumb of the dominant hand, which is being rubbed by while habit-tic deformity is considered to be a compulsive disorder, and medications such as selective serotonin reuptake inhibitors are of some use the patient could apply tape over the mid-nail fold and cuticle area during waking hours to avoid mechanical trauma.

DIFFERENTIAL DIAGNOSIS

Differential diagnosis for this condition is **median nail dystrophy**. This disorder is characterized by a central ridge or tube running longitudinally in the nail plate, resulting in regular radiating ridges in a Christmas tree-like pattern. The index or middle finger of that same hand. Other fingers may become involved, especially during times of stress.

Diagnostic clues in this case include a normal medical history, irregularly spaced horizontal grooves in the mid-nail plate, though not a finding in this patient but lichenification (skin thickening) of the nail fold and focal loss of the cuticle may be associated. The rubbing and picking damage the nail matrix, which lies proximal to the cuticle, producing an abnormal nail plate.



By Dr Deepak Singhal,
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