Onychopapilloma

- Benign
- Longitudinal erythronychia
- Distal subungual hyperkeratotic papule under the free edge of nail (hyponychium)
- Sometimes a notch at distal end of band
- Often has splinter hemorrhages
- Etiology not certain
  - ? HPV?
- Originates in distal matrix/proximal nail bed.

Onychopapilloma: Surgical removal

- Distal matrix
- Proximal nail bed

Squamous cell carcinoma in situ
Squamous Cell Carcinoma of the Nail

- History - usually tender / painful
- Features ---- subtypes
  - Verruous
  - Eczematous-like
  - Onycholytic/ oozing
  - Paronychial / habit tic- like
  - Longitudinal erythronychia / L melanonychia
- Biopsy techniques
  - Path / HPV?
  - Treatment

Preoperative diagnoses in series of 35 cases. SCC, squamous cell carcinoma./nail unit

Initial clinical diagnosis

- Subungual verrucous
- Onychomycosis
- Longitudinal melanonychia (nevus, melanoma)
- Subungual SCC
- Others (exostis, onychomatricoma,..)

Dalle, S., Depape, L., Phan, A., Balme, B., Ronger-Savle, S. & Thomas, L.
Squamous cell carcinoma of the nail apparatus: clinicopathological study of 35 cases.
British Journal of Dermatology 2007

Amelanotic melanoma in situ

Amelanotic Subungual Melanoma

- 25 % of subungual melanomas are amelanotic
- Painless pink subungual macule
- often causes a longitudinal split or defect in nail plate over time
  Occasionally verrucous lesions of nail folds and hyponychium
Longitudinal Erythronychia

• Most common
  – Solitary digit
    • Onychopapilloma
    • Glomus tumor
  – Multiple digits
    • Inflammatory/genetic, aging ridges, buffing/filing surface of nail plate
• Must consider
  – Amelanotic melanoma
  – Squamous cell carcinoma

What’s New Nail Surgery

• Anesthesia
• Surgical techniques
• Manage the specimen

Longitudinal Erythronychia: red lines in nail

• DDX
  – Onychopapilloma
  – Glomus
  – SCC
  – Darers/ LP (onychorrhexis)
  – Aging ridges
  – External trauma, filing
• Thin overlying plate allows red to show

30 mL MULTIPLE-DOSE
LIDOCAINE HCl 1% and
EPINEPHRINE 1:100,000
Injection, USP
For Infiltration and Nerve Block.
NOT FOR EPIDURAL OR CAUDAL USE
Epinephrine is Safe in Nail Surgery


Anesthetic Agents for Nail Blocks

<table>
<thead>
<tr>
<th>Agent</th>
<th>Onset</th>
<th>Pain on injection</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lidocaine w/epi</td>
<td>Seconds/minutes</td>
<td>moderate</td>
<td>2 hours</td>
</tr>
<tr>
<td>without epi</td>
<td></td>
<td></td>
<td>&lt;2 hours</td>
</tr>
<tr>
<td>Bupivacaine</td>
<td>45min</td>
<td>high</td>
<td>8 hours</td>
</tr>
<tr>
<td>Marcaine</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Ropivacaine</td>
<td>Seconds/minutes</td>
<td>low</td>
<td>7-8 hours</td>
</tr>
<tr>
<td>Naropin</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How to get perfect nail anesthesia every time!

- **Block:** Wing vs Ring?
- **Vibration:** 30 g needle /buffer
- **Time**
Preoperative skin preparation of the foot and ankle: bristles and alcohol are better.

Keblish DJ, Zurakowski D, Wilson MG, Chiodo CP. Brigham Foot and Ankle Center, Faulkner Hospital, Boston, Massachusetts, USA. djkeblish@annapolis.med.navy.mil

- 100 volunteers – various foot scrub methods
- Alcohol vs povidone-iodine, brush vs sponge
- Alcohol plus brush superior

Manage the nail biopsy specimen:

Need concise and clear guidelines for specimen submission:

- Orientation of tissue
- Clear information to histotechnicians
- Reproducible among different laboratories

Inking to maintain orientation

Tissue is placed on filter paper template.

Melanoma

Print template at www.phoeberichmd.com
Place biopsy in cassette

Cover with sponge to hold in place

Submit nail plate separately from soft tissue

Summary of Matrix/Bed Biopsy

- Use cartoon diagram
- Inking one end for orientation
- Submitting plate separately from soft tissue
Are we overlooking pachyonychia congenita?

- Subtle presentation in child
  - mild distal onycholyis and subungual hyperkeratosis
- Subtle nail changes in family
- Positive mutation in KRT6a gene.
- Disease severity can vary within family

Keratin 17 mutation in pachyonychia congenita type 2 patient with early onset steatocystoma multiplex. *Dermatol -2008*

**NAIL KERATINS**

Keratin 6, 16 and 17

Mutations in Keratins 6 and 16 lead to Pachyonychia Congenita Type 1

Mutations in K 6 and 17 lead to PC-2
Important Mutations in PC

- Keratin genes KRT6a and KRT16 in Type 1
  - Gene locus 12q13 in KRT6a, Gene locus 17q12-q21 in KRT16
- KRT6b and KRT17 in Type 2
  - Gene locus 12q13 in KRT6B, Gene locus 17q12-q21
- There was ablation of endogenous K6a expression in two keratinocyte cell lines after transfection with the siRNA's against K6a.


Psoriasis

- Nail psoriasis limited to the nails 5%
- Anecdotally, most treatments that improve psoriasis on the skin will improve nail psoriasis-
  - Possible Exception: UVB
  - delay due to nail growth
- Very few evidence based trials for nail psoriasis
- Evidence based data on several of the biologics

A significant association exists between the severity of skin and nail psoriasis

Zahra Hallaji, MD, a, b Farshad Babaei Jandaghi, MD, c Mahdi Akbarzadeh, MSc, d Seydeh Zeinali Seyedi, MD, e et al.

Management of Psoriatic Nail Disease

Nail involvement is common at some point in the life of the patient with psoriasis. Simple hard care, keeping nails cut short and avoiding nail trauma, will all help in management. Medical interventions include topical therapy used for psoriasis at other body sites, directed at the location of the disease within the nail unit. Individual digits may require intense treatment, such as oral retinoids. Systemic therapy for psoriatic nail disease can be justified when the disease presents in tumours with severe skin disease or where fractures and quality of life is insufficiently disturbed by nail involvement. Biological therapy is usually indicated in widespread psoriasis, but studies show that therapy directed at nail symptoms can be effective in the treatment of concomitant nail disease.
Onychomycosis and Nail Psoriasis

- About 1/3 of psoriatics have concomitant onychomycosis
- Toenails >> fingernails
- More often yeasts and non-dermatophyte molds than in non-psoriatics who have approx 90% dermatophytes
- Koebner reaction?

Nail Psoriasis Treatment: Where do we start?

- If mild nail psoriasis in pt without nail or joint symptoms or concerns: topical or minimal treatments
- For mild to moderate nail disease in absence of skin or joint involvement: topical, intralesional, other classical systemic meds.
- Moderate to severe nail disease with or without significant skin or joint disease, systemic therapy (classical or biologic) is appropriate.

Psoriasis and onychomycosis (OM):

- How often are both present?
  - 17% - 30% of psoriatics have om
  - 285 pts with nail psoriasis
  - 17% had om
  - 20 pts developed om prior to psoriasis tx during treatment
  - Koebner reaction from fungus ???
- Organisms
  - Candida albicans 3
  - Candida parapsilosis 3
  - E flocosum 3
  - T rubrum 2
  - T mentagrophytes 2
  - Aspergillus 1

Evaluation of the Efficacy of Acitretin Therapy for Nail Psoriasis

Objective: To evaluate the therapeutic efficacy of acitretin in patients with recalcitrant nail psoriasis.

Design: Open study involving 30 patients with moderate to severe nail psoriasis treated with acitretin.

Setting: University-based outpatient dermatology clinic specializing in nail diseases.

Patients: A total of 32 men and 8 women (mean age 41 years) with nail psoriasis.

Intervention: Therapy consisted of acitretin, 0.1 to 0.3 mg/kg/day, for 6 months.

Main Outcome Measures: Clinical evaluation, and Nail Psoriasis Severity Index (NAPSI) and modified NAPSI.

Onychomatricoma

- The most common nail diagnosis
- The most common nail misdiagnosis
- Enormous disease burden
- True deleterious effect on quality of life

Stigmatization in onychomycosis patients: a population-based study

- Treatments overall disappointing, with long-term cure rates <50% in many instances
- REAL UPDATE: $$$ for po terbinafine

Onychomatricoma

- Far more common than reported
- May be a cause of pincer nail
- Easily excised
- Recurrence relatively high
- Different clinical features

Lichen Planus of the nail

- Primary lesion of nail LP is onychorrhexis: longitudinal ridges in nail plate
  - Rapidly scarring -- atrophy and pterygium
  - Chronic progressive ridges that can end in matrix scarring
- Trachyonychia : LP is one of several conditions that present with trachyonychia
  - More common in children
  - Trachyonychia variant of LP does not lead to scarring, atrophy and pterygium

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Onychomycosis

- How to manage onychomycosis in pediatric patients?

What to do about onychomycosis due to molds and yeast?

Other fungi causing onychomycosis
Gabriele Fornara, MD, Roberto Arevalo, MD
Clinics in Dermatology 2010

Non-dermatophyte molds NDM

Black OM usually scytalidium, aspergillus or t rubrum.

Onychomycosis vs tinea ungium

- 2-12% of OM due to non-dermatophyte molds (NDM) up to 22% in some parts of world
- Not keratinolytic must rely on previous destruction of keratin or trauma
- Predisposing: family hx, foot wear, trauma, diabetes (52%), immunosupression
- Scopulariopsis, aspergillus, fusarium, scytalidium, acremonium
- Dx: if dermatophyte present
  - microscopy -- mycelium, arthrospores etc must be seen
  - Culture present in 5/20 isolates

13.6 % incidence of NDM in 413 cases

- Fusarium 26 cases
- Scopularius in 17 cases
- Acremonium in 9
- Aspergillus in 7
- 30 of 50 showed proximal disease with inflammation of nail fold
- Geographical differences around the world.
Pediatric Onychomycosis