ONCHOPAPILLOMA

Clinical, dermoscopic, and pathologic features of onychopapilloma: A review of 47 cases
Antonella Tosti, MD,* Samuela K. Schneider, MD,† Mac N. Ramirez-Quizon, MD,*


• First described in 1993 by Baran and Perzin as localized multinucleate, epidermal keratinocytes (not squamous OP [not all cases had multinuclear cells])
• Only 32 published cases until this study (more common than that)
• 47 cases of histologically confirmed OP, retrospective, past 5 years
• Clinical, dermoscopic, histologic features summarized

ONCHOPAPILLOMA

Clinical Features
• Erythroderma, most common (25)
• Neurontoma (7)
• Melanocytoma (4)
• Sphincter hemorrhage or telangiectasia (8, 3)
• Subungual mass, hyperteloristis (all)
• Distal fissuring (11)

Courtesy of Tara Miller, MD
ONYCHOPAPILLOMA
CLINICAL FEATURES (CONTINUED)

- Thumb > Index > 2nd > 3rd Digit (Hands)
- More common in fair skin types
- Melanonychia only seen in darker skin types
- Tumor compresses nail plate, thinning it, allows for red band and hemorrhage of decompressed nail bed to show through.


All cases had nail clippings

All cases had excisional biopsy
ONYCHOPAPILLOMA
HISTOLOGIC FEATURES

- Hyperplasia of distal matrix and nail bed epithelium, papillated distally
- Distal subungual hyperkeratosis/parakeratosis
- Hemorrhage
- Matrix metaplasia (eosinophilic, anucleated, 1 cell layer in nail bed)
- Large and multinucleate distal nail bed keratinocytes
- Sometimes pigmentation (melanocytic activation)
- Often with intact nail to make definitive diagnosis

Verruca vulgaris

Microscopic Nail Clipping Findings in Patients With Psoriasis


Clinical Findings
- Arthritis in 43%
- Nails: scores 1-4
- Pitting and onycholysis (53%), leukonychia (29%), oil spot (27%), subungual hyperkeratosis and splinter hemorrhage (10%)
- Onychomycosis (13%), crumbling (9%), Beau's lines (2%)
- More female patients (73%) in the group of clinically normal nails

| TABLE 1 | Comparison of Microscopic Nail Clipping Findings in Patients With Psoriasis and Onychomycosis and Patients With Psoriasis and Clinically Normal Nails |
|-----------------------------------------------|
|                  | Dermatopathology | Clinically Normal |
| Nail plate       | 0.44 (0.14)      | 0.41 (0.13)      |
| Discoloration    | 0.11 (0.13)      | 0.14 (0.16)      |
| Loss of lamellae | 0.05 (0.12)      | 0.07 (0.17)      |
| Deformity        | 15%              | 7%               |
| Onycholysis      | 40%              | 13%              |
| Blood            | 12%              | 4%               |
| Reactions         | 10%              | 11%              |
| Onychomycosis    | 8%               | 7%               |
| Nacreous          | 1%               | 5%               |

The values of the test t statistic are presented as mean values and 95% confidence intervals. The values of the test t statistic were converted to percentages. The authors of this study are not responsible for the study.
FIGURE 1. A-D. Dysrophic nails from patients with psoriasis. Viable tissue and nail matrix is present in region with irregular and rough surface and inner portions. A, low (original magnification); B, medium (original magnification); C, high (original magnification); D, high (original magnification).

FIGURE 2. A-D. Dysrophic nails from patients with psoriasis emphasizing the contrast between the 2 nail regions, relatively linear in (D). B and C. Compare A with D, and B with D. A, H&E; original magnification; B and D, H&E; original magnification.

FIGURE 3. Subungual region from a dystrophic psoriatic nail with neutrophils and serum lakes; cornocytes can also be seen. H&E; ×400 (original magnification).

FIGURE 4. Subungual region from dystrophic psoriatic nail with a slight hyperkeratosis (A), and PAS. B and D, In (A), arrows indicate basement membrane; in (B), the arrow points to neutrophils and PAS; in (D), arrows indicate basement membrane; in (C), PAS; ×400 (original magnification).

FIGURE 5. A, Dysrophic nail from a patient with psoriasis with a rough surface and inner portions. B, (A) shows the nail plate (B). C, nail plate (B). H&E; ×500 and ×400 (original magnification).

FIGURE 6. Dysrophic nail from a patient with psoriasis with numerous nuclei (karyolysis) and "nail sheath" are seen on nail plate. PAS; ×900 (original magnification).

FIGURE 7. Subungual region from a dystrophic psoriatic nail with a slight hyperkeratosis and PAS; ×400 (original magnification).

Summary
- Nails in patients with psoriasis may have abnormal histologic findings even in normally appearing nails
- Neutrophils are the most diagnostic feature in onychomycosis eliminated from dox
- Normal nails in patients without psoriasis do not have them, or serum, blood
- Secondary colonization by bacteria and yeast is common

• 184 nail specimens over a 2 month period
• 11% PAS stains completed
• If the nail specimen was negative, the specimen bottle was filled and the material centrifuged (thermo cytospun and cytoprint)
• Material then analyzed by dermatopathologist (Thin Prep/Pap Test)
• Of 52 cases negative on histology, 18 cases were positive on Thin Prep
• 150 total positive, 89% on histology and 18% on Thin Prep
• The early clinical and histologic diagnosis of nail melanoma is difficult
• Delay in diagnosis common
• 18 cases of nail MSS, largest series
• Compared with 5 nail matrix nevus and 5 nail matrix keratosis
• Clinical and histologic features summarized

Table 1: Clinicopathological features of 18 melanocytic nevi in nail unit

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<th>History</th>
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Fig. 1: Histopathologic findings of scattered atypical melanocytes. These areas showed a confluence of melanocytes with nuclear atypias, 10x Case 1; 40x Case 2; 40x Case 3; 40x Case 4.
Distal subungual (Hutchinson sign)

Fig. 6. Histopathological findings of subungual melanoma in situ. Hutchinson sign. (A) Skin lesion showing hyperkeratosis, acanthosis, parakeratosis, and hyperpigmentation. (B) Histologic examination showed subungual melanoma.

Progression over time

Fig. 7. Histopathological findings of subungual melanoma in situ. (A) Skin lesion showing hyperkeratosis, acanthosis, parakeratosis, and hyperpigmentation. (B) Histologic examination showed subungual melanoma.

NAIL MATRIX NEVUS

Fig. 8. Histopathological findings of nail matrix nevus. (A) Skin lesion showing hyperkeratosis, acanthosis, parakeratosis, and hyperpigmentation. (B) Histologic examination showed subungual melanoma.
Early melanoma in situ


- Nuclear atypia is a helpful criteria in early nail melanoma.
- Density of single melanocytes over 20 should prompt concern.
- Some areas may be subtle and may evolve over time (sampling error).
- Correlation with clinical features is crucial to avoid over- and underdiagnosis.

Courtesy of Mark Holzberg, MD