ORIGINAL ARTICLE

Clinical, dermoscopic, and pathologic features of onychopapilloma: A review of 47 cases

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Background: Onychopapilloma is a benign neoplasm of the nail bed and the distal matrix. Although not uncommon in our experience, only up to 32 cases of this tumor have been reported in the literature.

Objective: We sought to review the clinical, dermoscopic, and pathologic features of onychopapilloma.

Methods: We retrospectively analyzed the clinical features of 47 patients with pathologically confirmed onychopapilloma diagnosed within the last 5 years, and reviewed the published literature.

Results: The most common clinical presentation was longitudinal erythronychia (n = 25); followed by longitudinal leukonychia (n = 7); longitudinal melanonychia (n = 4); long splinter hemorrhages without erythronychia, leukonychia, or melanonychia (n = 8); and short splinter hemorrhages without erythronychia, leukonychia, or melanonychia (n = 3), with subungual mass (n = 47) and distal fissuring (n = 11). Pathology was consistent with acanthosis of the nail bed and distal matrix, with matrix metaplasia underlying distal subungual hyperkeratosis.

Limitations: This was a retrospective analysis.

Conclusion: To our knowledge, our series of onychopapilloma is the largest so far. Among various clinical presentations, longitudinal erythronychia is the most common. Dermoscopy of the free edge of the nail plate showing a small subungual keratotic mass where the band reaches the nail plate margin provides a clue for the diagnosis. (J Am Acad Dermatol http://dx.doi.org/10.1016/j.jaad.2015.08.053.)

Key words: nail; nail bed; nail dermoscopy; nail matrix; nail pathology; nail tumor.

Onychopapilloma is a benign neoplasm of the nail bed and the distal matrix first described by Baran and Perrin[1] in 1995. They identified a new entity presenting with a localized longitudinal band of splinter hemorrhages associated with a localized distal subungual keratosis and called it "localized multinucleate distal keratosis" because of the multinucleate (~10 nuclei) cells and the absent granular layer on histopathology.[1] In 2000, the same authors presented 14 more cases with similar features and introduced the term "onychopapilloma."[2] However, only 2 of these 14 new cases showed multinucleate cells. Gee et al[3] suggested that the terms "onychopapilloma" and "localized distal subungual keratosis with multinucleate cells" should not be considered synonymous as the histopathologic picture is different.

Onychopapilloma is a benign tumor of the nail bed and the distal matrix. It most commonly presents with longitudinal erythronychia,[3-6] but can also

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cause longitudinal leukonychia[7] or melanonychia.[8] On dermoscopy, the band originates in the lunula area with a proximal convex border and contains 1 or multiple splinter hemorrhages.[4] Pathologically, onychopapilloma shows papillomatous nail bed and distal matrix, layers of hyperkeratosis and matrix metaplasia, and no granular layer.[2] The lesion is usually not painful but may interfere with picking up small objects.[3,9]

The objective of this article is to review the clinical and dermoscopic features in 47 pathologically proven cases of onychopapilloma and compare our findings to the reports in the literature.

CAPSULE SUMMARY

- Onychopapilloma is a benign neoplasm of the nail bed and distal matrix.
- This article summarizes the clinical, dermoscopic, and pathologic data from what is to our knowledge the largest series of onychopapilloma (47 cases) reported to date.
- Clinicians will learn when to suspect the diagnosis of onychopapilloma and how to use the dermatoscope to make the diagnosis.

METHODS

The study was approved by the institutional review board committee of the University of Miami.

A literature search of PubMed/MEDLINE to identify case reports and series of onychopapilloma using the search term "onychopapilloma" was performed by 2 independent researchers, followed by footnote chasing.

All cases were diagnosed (A. T.) from September 2010 to April 2015. Clinical and dermoscopic images were taken and stored using the Handyscope (FotoFinder Systems, Bad Birnbach, Germany) attached to the iPhone 4S (Apple Inc, Cupertino, CA) and the FotoFinder videodermatoscope (FotoFinder Systems). Pathological diagnosis was made by M. M. Data about duration, location, age, and sex were obtained from the pathology report.

RESULTS

Literature review

Our search identified 32 cases published before this series. Onychopapilloma presented as a localized longitudinal erythronychia of 1 nail in most cases. Data about reported cases are summarized in Table I.

The clinical, dermoscopic, and demographic characteristics of our 47 cases of onychopapilloma are reported in Table II.

Clinical features

The thumb was the most affected digit (n = 24) followed by the index (n = 10), long (n = 6), and ring finger (n = 7). The most common clinical presentation was localized longitudinal erythronychia (n = 25), followed by longitudinal leukonychia (n = 7) (Figs 1 and 2).

Most patients with longitudinal erythronychia or longitudinal leukonychia had Fitzpatrick 1 to 3 phototypes (n = 32). The 4 patients with longitudinal melanonychia had Fitzpatrick 4 to 6 phototypes (Fig 3). The width of the bands ranged from 0.3 to 1.5 mm. Fissure of the distal nail plate overlying the lesion was seen in 11 cases. This was associated with a V-shaped notch and onycholysis in 5 cases. Splinter hemorrhages without erythronychia, leukonychia, and melanonychia were seen in 11 cases. In most cases the splinter hemorrhage extended to the proximal nail bed, but in a few patients was limited to the distal nail bed (Fig 4).

Splinter hemorrhages were uninterrupted or interrupted lines and solitary or multiple. In 3 of our patients, onychopapilloma presented as a short splinter hemorrhage.

Dermoscopy

Red bands were less visible with contact dermoscopy as they blanched with lens contact. The origin of the band in the lunula region had a pointed edge shape. Dermoscopy of the distal edge showed a keratotic subungual mass in correspondence to the streak in all cases (Fig 5). Splinter hemorrhages were better visualized as single or multiple thin purple to black interrupted irregular lines (Fig 6).

Pathology

All 47 cases had a nail clipping and longitudinal excisional biopsy of the tumor.

In the specimens from nail clipping the distal portion of the nail plate was of normal thickness in most cases (n = 31) and presented a localized asymmetric area of subungual layered hyperkeratosis (Fig 7, *A*). There was focal hemorrhage in the keratotic mass in 5 cases and, in 3 cases, the lower portion of the nail plate and the hyperkeratotic mass showed features of the keratogenous zone of the nail matrix (matrix metaplasia) (Fig 7, *B*). A diagnosis of onychopapilloma was suggestive in 18 cases. In all of them, the clipping included the entire distal nail margin.