

Dermatoscopic pattern of digital mucous cyst: report of three cases

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ABSTRACT Digital mucous cysts are benign ganglion cysts of the digits typically located on the dorsal aspect of the interphalangeal joint and distal phalanx of the digits. Usually the clinical diagnosis is straightforward, though sometimes it may mimic other lesions and diagnosis becomes a challenge. We present a series of three digital mucous cysts with a repeatable dermoscopic pattern consisted of linear branched and serpentine vessels when no compression is applied and translucent aspect with white bright areas and loss of vascular pattern when compression is applied.

Introduction

Digital mucous cysts are benign ganglion cysts of the digits typically located at the distal interphalangeal (DIP) joints or in the proximal nail fold [1]. Usually the clinical diagnosis is straightforward, though sometimes it may mimic other lesions and diagnosis becomes a challenge [2,3]. Dermatoscopy may be helpful in the clinical recognition of these benign lesions.

Report of cases

Case 1

A 29-year-old male presented with a 2-year history of a solitary, round, dome-shaped, fluctuant, asymptomatic nodule 8

mm in diameter located off the midline of the dorsal side of the third toe between the DIP joint and the proximal nail fold (Figure 1A). Polarized light dermoscopy without compression (Figure 1B) revealed flesh-colored aspect and linear branched and serpentine vessels originating from the periphery, while with compression (Figure 1C) the lesion turned more translucent with the presence of bright white structures and less prominent vascularization.

Case 2

A 27-year-old male consulted because of a solitary fluctuant nodule of 6 mm, which appeared 8 months prior to consultation, located in the dorsum of the second toe, between DIP joint and the proximal nail fold (Figure 2A). Upon polarized light dermoscopy examination without compression (Figure

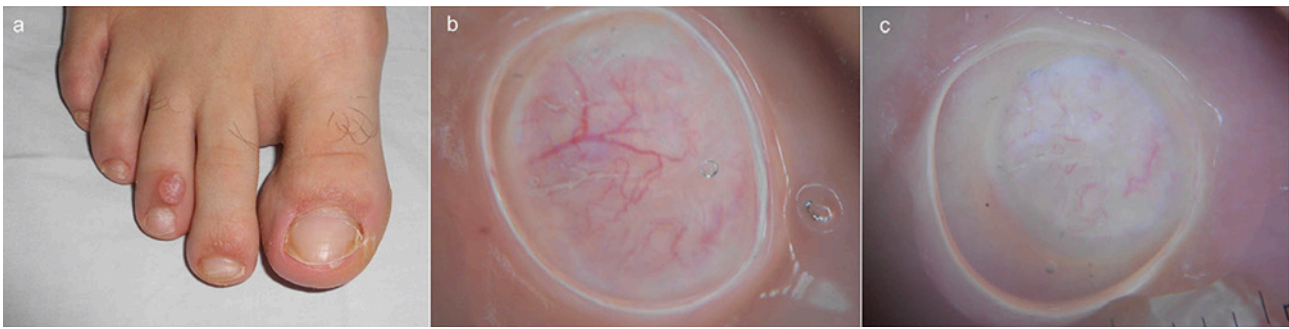


Figure 1. Case 1. Clinical image (A). Polarized light dermoscopy without compression showing linear branched and serpentine vessels (B). Translucent aspect upon polarized light dermoscopy with compression, with presence of bright white structures; decreased vascularization (C). (Copyright: ©2014 Salerni et al.)



Figure 2. Case 2. Clinical image (A). Polarized light dermoscopy without compression revealed thick linear branched vessels running from the periphery and crossing the center of the lesion (B). Dermoscopic aspect using polarized light dermoscopy with compression, translucent aspect with presence of bright white structures (C). (Copyright: ©2014 Salerni et al.)



Figure 3. Case 3. Clinical image (A). Polarized light dermoscopy without compression showing linear branched and serpentine vessels arranged from the periphery to the center (B). Translucent aspect upon polarized light dermoscopy with compression, with presence of bright white structures (C). (Copyright: ©2014 Salerni et al.)

2B) thick linear branched vessels running from the periphery and crossing the center of the lesion were observed, with compression (Figure 2C) the lesion turned translucent and whitish with bright white structures.

Case 3

A 54-year-old female presented with a 6-month history of a solitary, fluctuant, painful nodule, with a diameter of 8 mm located the dorsal side of the fourth finger of the right hand, on the DIP joint (Figure 3A). Polarized light dermoscopy without compression (Figure 3B) revealed the presence of linear branched and serpentine vessels arranged from the periphery to the center; without compression (Figure 3C) the

lesion turned translucent with bright white structures and vascular pattern became almost invisible.

Discussion

Mucous cysts are small cystic lesions that occur intradermally on the dorsal aspect of the interphalangeal joint and distal phalanx of the digits. The diagnosis of digital mucous cyst is usually clinical and straightforward. Unusual locations or presentations, however, may be difficult to identify [3]. Digital mucous cysts are usually solitary, round-to-oval, dome-shaped, firm-to-fluctuant papules or nodules, measuring 1-10 mm in diameter that have overlying skin that ranges from

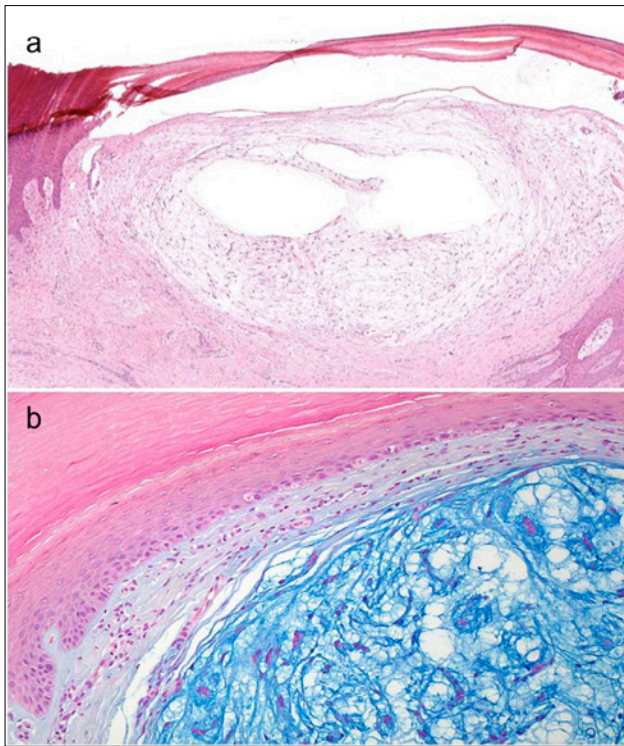


Figure 4. Histopathology evaluation: Cystic space containing clear mucinous material in the dermis (A; H&E, $\times 40$). The mucinous contents stained for acid mucopolysaccharides with Alcian blue (B; H&E, $\times 200$). (Copyright: $\text{©}2014$ Salerni et al.)

very thin to moderately thick. The cysts contain a viscous, gelatinous fluid that may be clear or yellow-tinged. They may appear suddenly or develop over a period of months. Grooving of the nail may precede the clinical manifestation of the cyst itself by up to 6 months. Currently, it is believed that the cysts arise from mucoid degeneration of connective tissue and this process, in most cases, involves communication with the adjacent DIP joint and possible coexistence of osteoarthritis. History of trauma has been documented in a small minority of cases.

Dermoscopic features of digital mucous cyst were first reported by two of us [2]. In the original observation, as well as the current series, the findings depended on whether or not pressure was applied in the examination with polarized light dermoscopy. When no pressure was applied, vascular pattern was predominant with the presence of linear branched and serpentine vessels in the 3 cases. When pressure is applied, vascular pattern become less prominent and the lesion becomes translucent with bright white areas.

Linear, branched and serpentine arrangement of vessels is a specific arrangement of vessels typically seen in basal cell carcinoma. But, as stated by Kittler, the specificity of this pattern for basal cell carcinoma is frequently overestimated [4]. It is true that basal cell carcinoma is the most common diagnosis in cases of non-pigmented nodular lesions with branched vessels, but in principle any invasive tumor in the dermis that lies below the superficial vascular plexus may have this pattern of vessels.

Histologically, there are two types of digital mucous cysts. The myxomatous, or superficial, type is located near the proximal nail fold and tends to fluctuate and resemble the focal mucinosis. The ganglion, or deep type, is located on the dorsum of a finger near the DIP joint and is analogous to the ganglion [5]. Histologically, digital mucous cysts do not have an epithelial lining (Figure 4A); so, the term cyst, although commonly accepted, is a misnomer.

We believe that the compression of the overlying dermis produced by the accumulation of mucin with a consequent flattening of the vascular plexus plus the thinning of the epidermis (Figure 4B), are responsible for the vascular pattern of linear branched and serpentine vessels observed with dermoscopy.

In summary, herein we present a series of three digital mucous cysts with a repeatable dermoscopic pattern consisted of linear branched and serpentine vessels when no compression is applied, and translucent aspect with white bright areas and loss of vascular pattern when compression is applied. Even though diagnosis of digital mucous cyst is usually straightforward, our findings prove that dermoscopic examination might provide additional useful information.

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