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Letter to Editor

Beneath the surface: Exploring an enigmatic nail growth

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Dear Editor,

Acquired digital fibrokeratoma (ADF) is an uncommon benign tumour of fibrous origin that usually presents as an asymptomatic, solitary, hyperkeratotic growth on the digits. This report presents a case of ADF, detailing its clinical presentation, histopathological features and the therapeutic approach employed.

A 42-year-old female presented with a painless growth on the left middle finger nail that had been present for 2 years. The patient had no history of prior trauma. It began as a small, raised lesion at the edge of the proximal nail fold, gradually developing another similar lesion that extended distally. Over the course of 2 years, the lesion evolved into a horn-like structure. The patient reported manipulating occasionally, but there was no history of previous nail infections or similar lesions in the past.

On examination, there were two longitudinal, smooth, firm, and flesh-coloured finger-like growths emerging from the periphery of the proximal nail fold, extending toward the distal part of the nail. One of the growths showed a slightly hyperkeratotic tip, while the other, located at the proximal and lateral nail fold angle, had been manipulated by the patient, leading to erythema with surrounding hyperpigmentation. A linear depression in the nail plate was noted beneath the growth. There was no attachment to the nail plate, and no tenderness was elicited [Figure 1a]. Dermoscopy showed a red-brown background with a yellowish keratotic tip [Figure 1b].

Given the differential diagnoses of ADF and Koenen's tumour, an excisional biopsy was carried out under a proximal digital block using 2% lignocaine without adrenaline. Histopathological examination showed hyperkeratosis, neutrophilic crusting, irregular acanthosis, and papillomatosis with focal thinning and underlying dermis having thickened collagen bundles, as shown in Figure 2. Based on clinical, onychoscopic, and histopathological findings a diagnosis of ADF was made. No recurrence was observed 6 months after excision.

The pathophysiology of ADF is uncertain. Trauma and infection with *Staphylococcus aureus* are considered triggers inciting fibroblast proliferation. ADF typically presents as a solitary, smooth, dome-shaped, and asymptomatic protuberance. It appears as a well-defined, skin-coloured papule with a hyperkeratotic collarette at the base. They primarily develop on the fingers and toes, particularly the outer digits, which are susceptible to microtrauma. They may be observed on the thumb and fifth finger in 11% and 10% of cases and on the great toe and fifth toe in 46% and 10% of cases, respectively.[1] Lower lip, nose, elbow, pre-patellar area, and periungual tissue are the other rare sites involved. They are generally <1 cm in size, though some giant ADFs (>1 cm) have also been reported.

Dermoscopy of ADF reveals a central homogeneous pale yellow area encircled by a hyperkeratotic white scaly collarette, with a whitish-yellow zone and dotted vessels located at the periphery.[2] Biopsy and histopathological examination are frequently necessary to confirm the diagnosis and to exclude other differentials, including malignant tumours near the nail apparatus. Common differential diagnoses include onychomatricoma, pyogenic granuloma, and Koenen's tumour associated with tuberous sclerosis.[3] In 1985, Kint *et al.*[4] categorised three histopathological variants of ADF, all sharing features of an acanthotic and hyperkeratotic epidermis. The most frequent variant (Type 1) is marked by thick, dense, irregularly arranged collagen bundles within the dermis. The second variant exhibits a greater concentration of clustered fibroblasts in the skin as compared to Type 1. There are fewer elastic fibres. The third and rarest variant has a poorly cellular dermis with an oedematous appearance and a complete lack of elastic fibres. Our case mainly aligns with a Type 1 ADF.[4]

ADF in periungual location can lead to various nail plate deformities, including thinning of the nail plate, longitudinal grooves, abnormal nail growth, trachyonychia, onycholysis, subungual hyperkeratosis, or the formation of haemorrhagic crusts.[2] Lesions do not regress spontaneously. Symptomatic and cosmetically debilitating lesions should be excised

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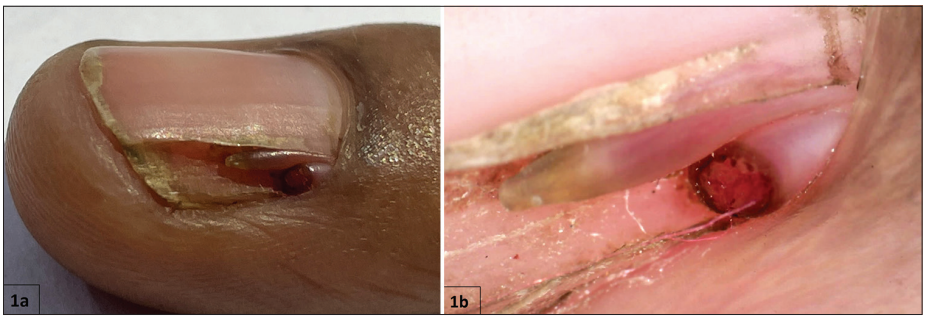

Figure 1: (a) Fingernail with two well-defined firm, erythematous finger-like projections. One of them has a hyperkeratotic tip, while the other has been sharply cut by the patient. (b) Dermoscopy showed a red-brown background with a yellowish keratotic tip (Dermlite DL4 ×10).

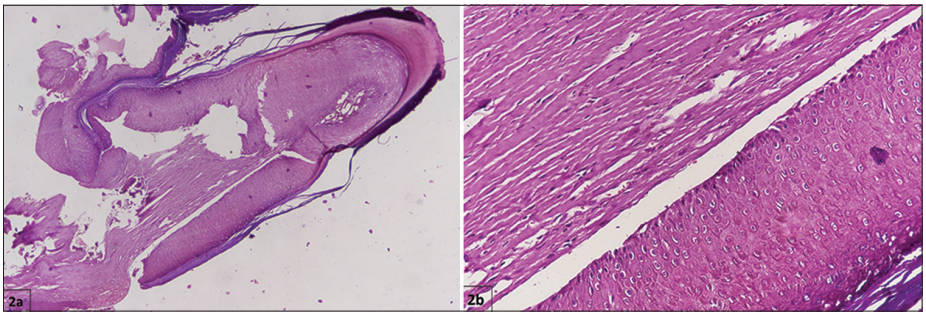

Figure 2: Histopathology (Hematoxylin and eosin, 2a: x40 and 2b: x200) showing hyperkeratosis, neutrophilic crusting, irregular acanthosis and papillomatosis with thickened dermal collagen bundles.

completely; however, recurrence after surgical excision is common. In a systematic review, lesions that underwent complete surgical excision had a recurrence rate of 9.2%, while lesions treated with partial excision had a recurrence rate of 71.4%. The overall recurrence rate recorded was 15.47%.[2] Lesions located above the nail plate can be treated through shaving, followed by phenolisation, carbon dioxide laser vaporisation, or surgical resection, which involves lifting the proximal nail fold.

In conclusion, we present this case to highlight an uncommon benign tumour of the nail unit that developed *de novo* without any prior trauma. This case underscores the importance of differentiating it from similar lesions in the nail unit. However, it is a benign condition. The associated nail plate changes and the unlikeliness of regression indicate the need for surgical excision, even though recurrences may occur.

Authors' contributions

All authors have contributed in manuscript formulation, editing and review. In addition, Dr Bhawuk Dhir and Dr Abhinav Bansal has done the literature search.

Ethical approval

The Institutional Review Board approval is not required.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Conflicts of interest

Dr. Vishal Gaurav is on the editorial board of the Journal.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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