

Retronychia Treated with Proximal Nail Avulsion; two Cases Successfully Treated with this Technique and the First cases of Retronychia Occurring After Chemical Matricectomy

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Introduction

Retronychia refers to a proximal in growth of the nail causing persistent proximal nail fold paronychia. Previously reported cases have treated this condition with total nail avulsion with satisfactory outcomes [1].

We describe three cases of retronychia; a chronic case where total nail avulsion had to be performed since the inflammation persisted after proximal nail avulsion and the first two cases of retronychia on an early clinical stage successfully treated with partial nail avulsion. We also describe the first two cases of retronychia appearing after a chemical matricectomy, occurring on the same patient.

Case 1

A 15-year-old male patient presented with deformity of the distal interphalangeal joint of the second finger of the left hand with a lateral depressible bulging on the joint area. He had suffered an ulnar fracture 2 months before. The nail exhibited distal onycholysis, a prominent white lunula, paronychia of the proximal nail fold and a deep pink transverse line over the lunula, similar to the onychodermal band (Figure 1). This caused pain and decreased manual dexterity. Retronychia on an early clinical stage was diagnosed and surgery was performed. Under digital block anesthesia and tourniquet placement, the proximal portion of the nail plate was resected, revealing a thick and double-layered proximal nail. The procedure led to resolution of pain and subsequent nail growth was normal.

Case 2

An 18-year-old man suffered a stump on his left toe, subsequently having periungual inflammation and excruciating pain. He consulted a podiatry that performed a unilateral phenol matricectomy that didn't improve the patient's symptoms. He



Figure 1: Early retronychia exhibiting deformity of the distal interphalangeal joint, distal onycholysis, a prominent white lunula, paronychia of the proximal nail fold and a deep pink transverse line over the lunula.



Figure 2: Late stage retronychia with granulation tissue on the proximal nailfold and marked paronychia.



Figure 3: Nine months after the total avulsion the nail had a normal growth with some yellow discoloration and mild pachyonychia.

then developed granulation tissue on the proximal nailfold, paronychia and worsening pain (Figure 2). 3 months later, curettage of nail fold granulation tissue and avulsion of the proximal portion of the nail plate was done under local anesthesia, leaving the distal portion of the plate on its place. The patient was reassessed a week later without showing great improvement so we proceeded to perform avulsion of the remaining plate. After 3 days the patient had no pain and 9 months later he had a normal growing nail (Figure 3). After two years, the patient developed onychocryptosis, affecting the lateral nail fold of the contralateral toe, which was treated with partial phenolization of the nail matrix. After four weeks, the patient developed inflammation on the proximal nail fold with protruding granulation tissue (Figure 4). We successfully performed a partial proximal nail avulsion, encountering a double-layered nail plate (Figure 5). The patient responded excellently to this procedure.

Discussion

Onychocryptosis or unguis incarnatus is an inflammatory condition where the nail plate or a spicule grows towards the periungual tissue, typically the lateral nail fold. It's most commonly seen with a bad nail trimming technique in adolescents. Proximal in growth of the nail is less common and although not many cases and series have been published, it's not as uncommon as it seems [2]. De Berker et al first described 3 cases of proximal in growing nails and gave this condition the name of retronychia in 1999. According to the first description of this pattern of nail in growth, published by the same author a few years later, patients with retronychia manifest two cardinal features: proximal paronychia and elevation of the proximal nail plate [1]. Other common clinical features include, thickening of the proximal portion of the nail plate, a proximal plate with multiple layers, yellow nails,

granulation tissue arising from the traumatized proximal nail fold and distal onycholysis [3, 4]. Toes are affected the vast majority of the time and hands are infrequently affected [1].

Little is known about the exact mechanism by which retronychia is caused. Trauma; as in Case 2, and a systemic insult; as in Case 1, have both been implicated in the pathologic mechanism of retronychia. Distal recurrent trauma, commonly from footwear, detaches the plate from its bed and from the matrix, causing disruption of the longitudinal growth of the nail [3]. As the new nail grows it pushes the old plate upwards and backwards. Baumgartner and Haneke [4] described 5 cases where distal onycholysis was a common denominator allowing the nail to have back-and-forth and tilting movements which magnifies the trauma to the proximal nail fold. One of our cases had distal onycholysis, while in the other case the distal plate remained firmly attached to the nail bed, as the cases described by de Berker [1]. To our knowledge, the development of retronychia after a matricectomy hasn't been reported previously.

The diagnosis of retronychia is made by the clinical findings described above. This condition is frequently misdiagnosed as infectious paronychia [4]. Since quality of life is diminished by this condition because of pain, dermatologist should be able to diagnose retronychia in early stages in order to provide patients an appropriate treatment.

Differential diagnosis of this condition should include soft tissue infections, inflammatory conditions with periungual involvement such as psoriasis and nail tumors, for instance, squamous cell carcinoma, melanoma or metastases from malignant tumors, particularly if this is associated to nail dystrophy and onychomadesis.

Nail avulsion is nowadays the first-line treatment, since it is inexpensive, fast and easy to perform with excellent results [6]. Partial nail avulsion should be considered in order to have a faster recovery period. If an underlying nail is found during avulsion, viability of the nail should be carefully assessed. Any signs of non-viability should encourage the surgeon to remove it [5]. Superimposed infection should be managed with topical or systemic antibiotics, according to its severity.

Conclusion

Chronic proximal paronychia and elevation of the proximal nail plate should raise suspicion of retronychia [7]. Patients usually have history of trauma or a systemic acute insult that abruptly stop the nail growth. The new nail then pushes the old plate upwards and backwards, leading to trauma of the proximal nail fold [5]. Nail avulsion improves the patient's symptoms and is usually curative. When retronychia is diagnosed on an early stage, the avulsion could be conservative, keeping the distal portion of the plate. The prognosis of these patients is favorable if surgical treatment is performed.

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Figure 4: Retronychia exhibiting inflammation of the proximal nail fold with granulation tissue.



Figure 5: Proximal avulsion of the nail plate with a thick and double-layered plate.

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