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CASES FOR DIAGNOSIS

Subungual Verrucous and Painful Tumor

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Clinical History

The patient was a 22-year-old woman with no relevant past medical history, who was seen for a subungual lesion on the right thumb that had been present for 8 months. She denied any previous local trauma. The tumor was very tender, had arisen spontaneously, and had been complicated on several occasions by secondary bacterial infection and episodes of bleeding.

Physical Examination

Examination revealed an exophytic, hyperkeratotic, subungual tumor of yellowish color, with areas of hemorrhage. It was situated at the edge of the nail, producing onycholysis and longitudinal striations of the nail plate (Figure 1).

Complementary Tests

A punch biopsy was taken from the border of the lesion (Figures 2 and 3). A plain radiograph of the hand was then requested and this confirmed the histological findings (Figure 4).

Histological Description

The lesion was a subcutaneous tumor that reached the dermis and was surrounded by a moderate inflammatory infiltrate (Figure 2). It consisted of 2 phases, the more superficial being cartilaginous, formed of round cells with a large amount of clearly defined cytoplasm, in a basophilic, hyaline stroma (Figure 3). The deeper phase was formed of eosinophilic, bony spicules in which it was possible to observe Haversian systems and cement lines. The lesion was surrounded by a lymphohistiocytic inflammatory infiltrate with osteoclasts.

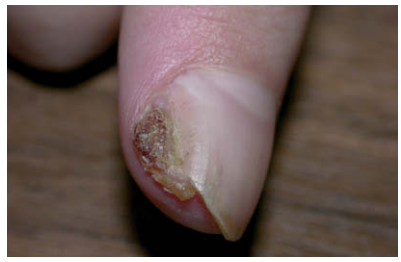

Figure 1.

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Radiological Description

Radiography of the hand: cup-shaped bony excrescence, which was continuous with the distal third of the distal phalanx, giving rise to changes on the surface of the adjacent soft tissues (Figure 4).

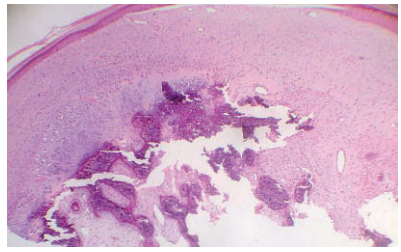

Figure 2. (Hematoxylin-eosin, ×20)

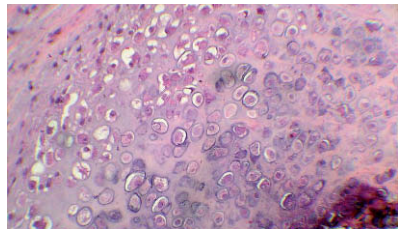

Figure 3. (Hematoxylin-eosin, ×100)

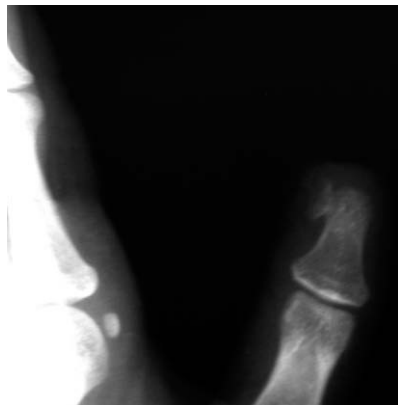

Figure 4.

What Was the Diagnosis?

Diagnosis

Subungual exostosis

Comment

Subungual exostosis is a variant of osteochondroma, a rare, benign tumor first described by Dupytren in 1987.[1] It is usually a single, acquired lesion, though multiple lesions can also occur in the context of an autosomal dominant syndrome called hereditary multiple exostoses.[2-4]

Its pathogenesis is unknown, though the most widely accepted origin is trauma, and recurrent microtrauma to the area (due to footwear or sports) can be identified in more than half of cases.[5]

The most common site is the great toe (85%). Less frequently it develops on the hands, usually then affecting the thumb or index finger.[6]

It can appear at any age, but most commonly occurs in children and adolescents. It is more common in women than in men, with a 2 to 1 ratio, except in childhood, when both sexes are affected equally.[1]

Clinically it is characterized by an excrescent, hyperkeratotic nodule, often with a papillomatous surface, lifting the medial border or, more rarely, the free border of the nail, which acquires a violaceous color. Loss of the nail would reveal a fibrous proliferation overlying the exostosis. The nodule may ulcerate or become infected. The presenting complaint is often a painful inflammation of the surrounding tissues, paronychia, or the formation of a pyogenic granuloma or callus.[1,5,6]

Histologically it resembles bony callus. At the base it has the appearance of normal trabecular bone covered by a fibrocartilaginous layer. Enchondral ossification occurs from the base to the tip, such that immature lesions have a thick cartilaginous layer whereas mature exostoses present a thin layer of cartilage.[7]

Using electron microscopy, Kato et al[8] observed 2 cell populations: inactive osteocytes in the calcified matrix and osteoblasts in the fibrocollagenous matrix.

The diagnostic suspicion must be confirmed radiographically in 2 projections: anteroposterior and lateral. A cup-shaped exophytic outgrowth of trabecular bone is observed on the dorsal aspect of the distal phalanx. The distal fibrocartilaginous layer that covers the bony excrescence cannot be visualized on plain radiography.[9] Magnetic resonance imaging can be useful to identify small foci of ossification in the nail bed.[10]

Treatment is by surgical excision, which is curative in 90% of cases. The cartilaginous surface must be completely excised in order to prevent recurrence, and curettage and debridement of the tumor bed must be performed.[11] Neither radiation nor simple cautery is effective.

It is preferable to avoid skin biopsy due to the risk of osteomyelitis. The risk of malignant degeneration of a single osteochondroma is of 1%.[1]

Conflict of Interests
The authors declare no conflicts of interest

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