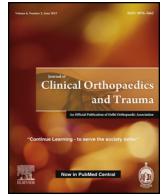




Contents lists available at ScienceDirect

Journal of Clinical Orthopaedics and Trauma

journal homepage: www.elsevier.com/locate/jcot



Case report

Subungual osteochondroma: Nail sparing excision

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ARTICLE INFO

Article history:

Received 7 May 2016

Accepted 14 June 2016

Available online xxx

Keywords:

Subungual
Osteochondroma
Excision
Ring tourniquet
Nail

ABSTRACT

Subungual osteochondroma is a relatively uncommon benign bone tumor affecting mostly children and young adults, and is a major source of pain and nail deformity. Treatment consists of marginal excision and meticulous wound closure. In this report, we present three cases of subungual osteochondroma arising from the dorsal aspect of distal phalanx of the great toe, which were managed by marginal excision with preservation of nail apparatus under digital block anesthesia with the use of a ring tourniquet. We emphasize on the use of ring tourniquet made by glove's finger and the technique of preserving the nail apparatus to prevent nail deformity. At final follow-up, there is no evidence of recurrence or nail deformity with good functional and cosmetic result.

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1. Introduction

Subungual osteochondroma is a rare, benign bony tumor that usually involves the phalanges of the toes or fingers, most commonly the distal phalanx of hallux.¹ It was first described by Dupuytren in 1817, as a bony outgrowth of the distal phalanx of the great toe that is now popularly known as “Dupuytren's exostosis”. We report on three cases of subungual osteochondroma. All the cases were originated from dorsal aspect of distal phalanx of the great toe and were excised under digital block anesthesia using ring tourniquet made of glove's finger with careful preservation of the nail apparatus. In two cases, we were able to keep the entire nail plate intact and the soft tissue defect thus created was covered by suturing the nail edge with the skin edge.

2. Case presentation

2.1. Case 1

A 14-year-old female presented with a mass on the tip of left great toe beneath the nail of six months duration. The mass was

painless and slowly progressive in size, to the extent that it has lifted the nail plate causing ugly nail deformity (Fig. 1). On examination, the swelling was approximately 10 mm × 10 mm × 5 mm in size, situated beneath the nail. The mass was nontender, firm in consistency and covered with dry, scaly skin with no restriction of movements of proximal and distal interphalangeal joints. There were no nail changes. Radiographs revealed a bony outgrowth off the dorsum of the distal phalanx of the great toe (Fig. 2). A provisional diagnosis of subungual osteochondroma was made and the mass was excised under digital block using ring tourniquet. The ring tourniquet was made by cutting a sterile glove's finger through its base and encircling this piece of latex around the base of the great toe and tying both the ends of glove finger with a hemostat as shown in Fig. 3. The mass was carefully separated from the nail plate and an osteotome was used to divide the base of the mass from the distal phalanx of the toe (Fig. 4). This technique created soft tissue defect of 1 cm × 1 cm area (Fig. 5), which was closed by suturing the nail edge with the skin (Fig. 6). At latest follow-up, there is no evidence of recurrence or nail deformity.

2.2. Case 2

An otherwise healthy female, 19 years of age, presented with a slowly growing mass under the right great toenail for the past two years. There was no history of trauma. On examination, there was a nontender, fixed, firm nodule on the dorsal aspect of

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<http://dx.doi.org/10.1016/j.jcot.2016.06.014>

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Pre Op



Fig. 1. Pre-operative clinical photograph of hallux of case 1 showing the subungual lesion.

Pre Op Radiograph

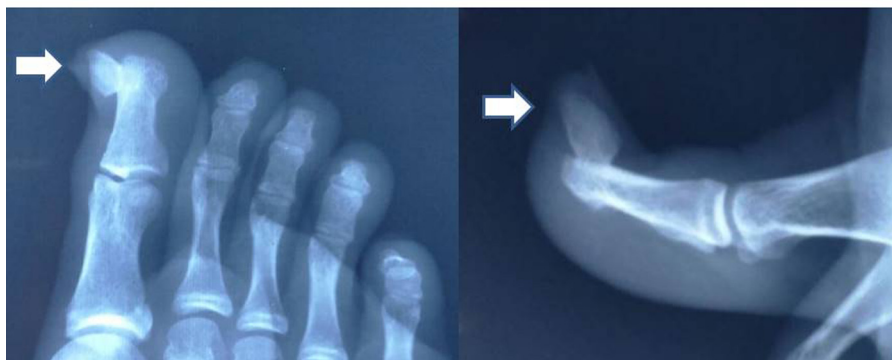


Fig. 2. Pre-operative anteroposterior and lateral radiograph of foot of case 1 showing bony outgrowth arising from the dorsal surface of distal phalanx of hallux.

the right great toe, beneath the nail plate. The lesion was about 5 mm × 5 mm in size and was not associated with nail plate deformity or onycholysis. Radiograph revealed a bony exophytic lesion arising from the distal phalanx of the hallux suggestive of subungual osteochondroma. 3-D Computed Tomography (CT) of the involved toe showed the lesion was arising from the dorsal surface of distal phalanx and was quiet eccentric in location (Fig. 7). The patient underwent excision with careful preservation of the germinal matrix of nail bed. At latest follow-up, the patient is free of recurrence and nail deformity.

2.3. Case 3

An 18-year-old female presented with 5 months history of swelling beneath the right great toe nail. There was history of insignificant trauma 5 months back. Examination revealed a subungual nodule of size 10 mm × 5 mm. The lesion was non-tender, non-reducible and non-fluctuant on palpation. Radiograph

demonstrated the presence of exostosis arising from the distal phalanx of great toe. Excision was performed in a similar way as performed in cases 1 and 2.

In all the three cases, bloodless field was achieved using ring tourniquet, and adequate anesthesia was achieved with digital block. Histopathological examination of the lesion in all the cases confirmed the diagnosis of osteochondroma.

3. Discussion

Subungual osteochondroma is a relatively rare, benign osteocartilaginous tumor occurring mainly in second and third decades of life. It affects both sexes equally. They are most commonly seen in the distal phalanx of the great toe. However, other toes may be involved. Clinically, it appears as small, pink colored, hard, nodule that projects beyond the free edge of the nail. The overlying nail may become brittle and may be lifted or become detached.

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