Osteochondroma is the most common benign bone tumor. However, it is rarely observed in a subungual location in the fingers. Clinically, these lesions may present as a slow-growing mass, usually on the dorsum of the distal phalanx, and eventually cause nail deformities and pain. This report presents a case of multiple subungual osteochondromas of the fingers that were treated by excision. To our knowledge, this lesion has not been previously reported in the English literature.

CASE REPORT

A 12-year-old boy presented with multiple subungual masses on his left index, both ring fingers, and his right index finger (Fig. 1). These masses were first observed 3 years prior to presentation without a history of trauma, and had enlarged gradually, causing pain and nail deformities. Other masses around both knee joints were detected a year prior to this presentation. A physical examination showed a firm, circular mass of the distal phalanx on the left index finger (of 5 × 3 mm), on the left ring finger (of 7 × 5 mm), and on the right index finger (of 7 × 5 mm). Nail deformities and tenderness were also noted. There was a radial angular deformity in the DIP joint of the left ring finger, and a shortening of the left ring and the right middle finger and of the little fingers. There was no limitation of motion of any finger joint. A physical examination showed palpable masses on the left distal ulnar, the left scapular, and both distal femurs.

A radiographic examination revealed a well-circumscribed bony growth on the dorsum of the distal phalanx of the left index and the right index finger and of the ring fingers, which were located in the juxta-epiphyseal area (Fig. 2). A skeletal survey demonstrated multiple metaphyseal exostoses of the long bones of the upper and lower extremities. There was no relevant familial history.

Under general anesthesia, the subungual masses on his left index and right index finger and on both ring fingers were removed through the nail beds after removing the deformed nails. The nail beds were trimmed, and repaired with 6-0 cat gut. A pathologic examination revealed a trabecular bone pattern covered with a hyaline cartilage cap, which is consistent with osteochondroma (Fig. 3).

One year after surgery there was no evidence of recurrence, and the patient was satisfied with his new nails, which were painless and had a good appearance (Fig. 4).

DISCUSSION

Osteochondroma is the most common benign bone tumor, and is usually solitary (90 percent). However, it can occur as an inheritable form of multiple exostoses. Several authors have stated that involvement of the tubular bones of the hand and of the carpus is uncommon.

Subungually located osteochondromas are rare, and if present, are more common in the toes than in the fingers.
Although several reports of subungual osteochondroma in the fingers have been issued\(^3-5\), we could not find any case of multiple subungual involvements in the fingers in the literature.

The radiological appearance of a subungual osteochondroma is diagnostic; it exhibits well-defined, circumscribed, pedunculated bone growth projecting from the dorsum of the distal phalanx\(^3\). Pathologic examination typically shows well-defined trabecular bone topped with a hyaline cartilaginous cap\(^5\).

Subungual exostosis may be confused with a subungual osteochondroma. However, many authors suggest that these lesions are different pathological entities, because exostosis is more commonly observed in women, and is usually located at the distal phalanx tuft away from the juxta-epiphyseal area, which is a typical site of osteochondroma. In addition, the cartilage component in exostosis includes fibrocartilage more than hyaline cartilage, which contrasts to the cartilage present in an osteochondroma\(^1,3,5\). The clinical findings in our patient were consistent with an osteochondroma and the diagnosis was supported by both radiographic and histologic examinations.

![Fig. 1. Multiple subungual masses on the patient’s (A) left index and ring fingers, and (B) right index finger causing nail deformities.](image1)

![Fig. 2. (A) Preoperative radiographs demonstrating well circumscribed multiple bony lesions in the distal phalanges of the left index and ring fingers, and in the right index finger, which were located adjacent to the epiphyseal line. (B) Preoperative radiographs demonstrating well circumscribed multiple bony lesions in the distal phalanges of the left finger, located adjacent to the epiphyseal line.](image2)

![Fig. 3. Histopathology of the lesion revealing a trabecular bone pattern topped with hyaline cartilage after Hematoxylin-Eosin staining ($\times$ 12.5).](image3)

![Fig. 4. One year after surgery, there was no evidence of recurrence and the cosmetic appearance was good.](image4)
A subungual osteochondroma can occur in the distal phalanges of more than one finger. Excision of the masses and reconstruction of the affected nail beds generally produces a good result.

REFERENCES