Proximal Thumb Osteoid Osteoma – A Rare Site of Affection

Mohammad Alsaleem, MBBS, Saudi Board* Eyad Alqasim, MD**

A twenty-two-year-old right-handed male with rare affection of osteoid osteoma of the left thumb was presented. CT was performed revealing a characteristic nidus. Resection of the tumor was performed and histopathology confirmed the diagnosis of osteoid osteoma. At 4-month postoperative follow-up visit, the patient had complete return of functions with full range of motion of the interphalangeal and metacarpophalangeal joints without pain or neurological deficit. Classical symptoms include nighttime pain and effective pain response to non-steroidal anti-inflammatory drugs (NSAIDs). Complete resection is necessary for complete resolution.


Osteoid osteoma is a benign lesion affecting most commonly long bones; particularly the metaphyseal and diaphyseal regions (50%). The most common location is the proximal femur and the tibia. However, the spine, hand and foot may all be affected. In the hand, it accounts for only 7-10% of benign tumors with the proximal phalanges being the most common sites (75%), while the metacarpals and carpal anatomy is the least (2%)1,2. The most commonly affected digit is the index while the least is the thumb3. A review of the literature revealed that the metacarpals are common sites of involvement as the proximal phalanges4.

Most cases occur during the second or third decades of life with a slight male to female predominance (2-3:1)1. Typical symptoms include pain, which is progressive and worse at night or following alcohol consumption. It is, however, typically relieved by non-steroidal anti-inflammatory drugs (NSAIDs)5. A physical examination may reveal swelling, effusion and other anatomic changes, such as scoliosis secondary to paravertebral spasms. Other features may include nail hypertrophy and premature physeal closure in adolescents4.

Typical X-ray findings consist of a reactive or sclerotic cortex surrounding an area of lucency referred to as the nidus6. The nidus is < 1.5 cm; otherwise the diagnosis of osteoblastoma may come into question. CT is the modality of choice to reveal the nidus1. Because of the high vascularity of this lesion, bone scans, and angiography may also be used, but they are not typically performed due to their low specificity. Histologically, the nidus is highly vascular and composed of osteoid trabeculae of woven bone3,5,6.

NSAIDs may be used to relieve the pain. Successful treatment of persistent osteoid osteoma consists of a complete resection1,5,6. Other treatment modalities, such as radiofrequency ablation have also been suggested2.

The aim of this presentation is to highlight uncommon diagnosis of osteoid osteoma of the thumb.

THE CASE

A twenty-two-year-old right-handed male presented with a 4-year history of pain and hypersensitivity involving the proximal phalanx of the left thumb. The pain was sharp and throbbing in nature occurring 7–10 times per day, each for a few minutes. There was no day or night difference in the severity of symptoms. However, the pain was relieved by either Diclofenac or Ibuprofen. The patient described the effectiveness of the pain-killer that he could forcefully strike his finger against a table without feeling the same pain.

During the 4-year period, many X-rays and MRIs were performed without reaching a diagnosis. Physical examination revealed approximately 2 cm non-tender, non-mobile hard swelling involving the anterolateral side of the proximal phalanx of the left thumb without any overlying skin changes. Initially, X-ray films revealed periosteal thickening of the radial-volar cortex of the proximal phalanx of the left thumb, see figures 1, 2 and 3.

Figure 1: AP View of the Left Thumb Showing Thickening and Hypersclerosis of the Radial Cortex of the Proximal Phalanx

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*   Consultant Orthopedic Surgeon
   King Fahad Hospital
   Hofuf, Kingdom of Saudi Arabia

**   Registrar
    Department of Orthopedics
    King Hamad University Hospital
    Kingdom of Bahrain
    Email: eyad.alqasim@khuh.org.bh