Triquetral Osteoid Osteoma: A Diagnostic Dilemma

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Abstract

Background: Osteoid osteoma (OO) is a benign osteoblastic neoplasm, mostly occurring in long bones of lower extremity. Its manifestation in unusual locations can be a diagnostic challenge and distressing for patients. OO in carpal bones is uncommon; its occurrence in triquetrum is even more so.

Case Presentation: This study reports on a nineteen-year-old female with history of wrist pain for 4 years. She had sustained trauma to the same wrist before commencing of pain. Patient’s pain was unresponsive to conservative treatments. Her routine x-rays were mostly interpreted as normal and obtaining further imaging helped us in diagnosis of OO of triquetrum. Surgical resection of the nidus was performed.

Conclusion: Manifestation of OO in small carpal bones may not be typical; identifying the lesion or nidus could be challenging. Whatever unusual the location or presentation of such lesions may be, obtaining advanced imaging can be of significant help; therefore, we suggest clinicians to have low threshold in ordering advanced imaging specifically in patients suffering from chronic pain. Also, persistent history of nocturnal pain is a sign which is worth attention.

Keywords: Osteoid Osteoma; Tumors; Diagnosis; Carpal Bones; Triquetrum Bone

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Background

Osteoid osteoma (OO) is a benign osteoblastic neoplasm, usually found in long bones of lower extremities (1). It is uncommon in hand and wrist and its diagnosis in unusual locations is difficult because of its atypical presentation both clinically and radiologically (2). Diagnosing OO in small carpal bones has been historically challenging. Literature review revealed no more than two reports of OO in triquetrum, both with delayed diagnosis (3, 4). Further investigation revealed that despite radiologic advancement and ample case reports in the last decade, duration of delay in diagnosis in cases of OO in unusual locations has not changed (5).

In small bones, it does not present with its typical features (6). Identifying nidus in small bones such as triquetrum or other carpal bones can be puzzling. Diagnosing such lesions needs approach, focused history, combined with radiographic evaluation and an experienced consult. This might alter a patient’s long agonizing wait for diagnosis and treatment. In this case, true diagnosis was made after 4 years of pain and countless referrals to rheumatologic and orthopedic specialists.

Patients presenting with unusual history are more confusing than one can imagine. Our patient had trauma to wrist prior to commencing of pain, this camouflage can be misguiding. However, the most helpful feature in history was the nocturnal nature of pain.

Case Presentation

A nineteen-year-old female presented to our clinic with history of right wrist pain for 4 years. Pain was on ulnar side and mostly nocturnal in nature. She gave a history of trauma to the same wrist 5 years ago. She consulted various physicians, rheumatologists, and orthopedic surgeons, attended numerous physical therapy sessions, and even used wrist splint in course of 4 years. Her x-rays were mostly interpreted as normal. On examination, we noted restricted painful range of motion of right wrist specifically in flexion beyond 50 degrees and in radial deviation. We also noted something peculiar, a sharp tenderness over ulnar-sided carpals. This made us suspicious and led us to order further investigations such as computed tomography (CT) and bone scan.

CT scan of wrist showed a benign confined lesion in triquetrum (Figure 1) and bone scan displayed increased uptake at triquetrum; this brought us to conclusion that there is a benign tumor in triquetrum, most probably OO. Prior to surgery, magnetic resonance imaging (MRI) of wrist was performed to evaluate the extent of tumor and rule out involvement of soft tissue. Surgical extraction of nidus was performed and sent for pathological evaluation.

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Figure 1. Preoperative images: A: Preoperative magnetic resonance imaging (MRI), showing triquetral lesion; B: Computed tomography (CT) scan showing the lesion at anterio-distal surface of triquetrum with central nidus; C: Immediate preoperative x-ray anteroposterior (AP) view, showing sclerotic lesion at triquetral pisiform junction.
The report from biopsy stated OO. Postoperatively, the patient became nearly pain-free and was discharged the next day (Figure 2). A volar wrist splint was applied for 3 weeks. One year follow-up showed excellent wrist range of motion (ROM) and grip. No pain was reported and postoperative physical therapy was not needed.

A growing number of cases with unusual locations of OO have been reported in recent decade, and this is attributed to more frequent use of advanced imaging during preliminary diagnosis. Therefore, we recommend clinicians to keep differential of OO in mind, specifically when evaluating patients with chronic hand or wrist pain. We would like to emphasize that patient history is very important in achieving accurate diagnosis; in this case, patient had persistent nocturnal wrist pain for 4 years and consuming NSAIDs gave her significant pain relief. This is typical of OO, whatever unusual the location might be.

Conflict of Interest

The authors declare no conflict of interest in this study.

Acknowledgments

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