

Osteoid Osteoma of the Capitate: Diagnosis Sometimes Delayed

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Abstract: Osteoid osteoma is a benign bone tumor that rarely involves the carpal bones. In the hand the diagnosis may be delayed because of the nonspecific symptoms, and the tumor is often mistakenly treated as another disease. We present case of Osteoid osteoma of the capitate which has diagnosis as late as 36 months.

Keywords: Osteoid osteoma, capitate, benign, tumor

INTRODUCTION

Osteoid osteoma is a benign osteoblastic tumor that account for as many as 10–12% of all benign bone tumors, Osteoid osteoma of the capitatum is exceedingly rare [4,2]. Jaffe and Moyer described the first case, in 1935, since a limited number of cases have been reported [5]. Osteoid osteoma of the carpus is often misdiagnosed because of the uncharacteristic Clinical presentations. We report a case of a missed and delayed treatment of osteoid osteoma of the capitate.

CASE REPORT

32 years old right-handed male, rider was admitted with a 3 years history of intermittent and mainly nocturnal pain, in his right wrist, which had gradually worsened. He had sustained a trauma of the right wrist 5 years previously. Physical examination showed a diffuse soft tissue swelling over the dorsum of the wrist (Figure 1) and a localized Pain over the first row of the carpus by palpation. The range of motion of the wrist was decreased in all planes. The clinical test with acetylsalicylic acid produced improvement of the

symptoms. No other acute symptoms were reported by the patient. His general examination was unremarkable and he was in good health. Laboratory tests were normal.

Plain x-ray images of the wrist demonstrated a suspicious increased well-delimited oval density of the dorsal side of the capitatum (Figure 2). CT-scan revealed a classic lucent lesion with a nidus (Figure 3). The history and clinical and radiographic findings pointed to the diagnosis of an osteoid osteoma of the Capitatum. Open excision and curettage of the lesion was performed through a dorsal approach. (Figure 4) The defect was filled with autologous cancellous graft from the distal radius. Histological examination of the tumor showed the characteristic pattern of osteoid osteoma. At his first out-patient follow-up visit at our clinic he has shown good clinical improvement, the patient remained pain-free. Long-term 48 months follow-up revealed no recurrence of the tumor and full resolution of his preoperative symptoms.



Fig-1: swelling of the right wrist



Fig-2: Radiographs of the left On the PA view: there is sclerosis of the capitate



Fig-3: The CT view of the nidus as a well demarcated radiolucent area in the capitates



Fig-4: Excisional resection with curettage

DISCUSSION

Osteoid osteoma is a benign solitary bone tumor usually localized in or on the cortex of a long bone [3, 4]. It accounts for 3% - 4% of all primary bone tumors, and 10%-14% of all benign bone tumors [3]. Between 1909 and 1992, Murray *et al.* [13] identified 44 primitive tumors of carpus bones among 26800 bone tumors. 11 osteoid osteomas have been counted among these 44 tumors (prevalence = 0.04%). It is rare condition in carpus; consequently the diagnostic is frequently delayed, with a mean time to diagnosis of longer than 15 month [10, 8]. Patients are seen initially in the late second or early third decade of life, with the ratio of males affected at more than 2:1 [9, 8]. Pain is the most common symptom, 80% of patients, often increasing at night and with alcohol ingestion, while it is ameliorated through use of acetylsalicylic non steroidal anti-inflammatory drugs (NSAIDs) [10, 7]. Physical examination usually demonstrates well-

delineated tenderness and swelling. Depending on location of the lesion, when it is in a dorsal side, the symptoms suggest tenosynovitis of the extensor tendons. Carpal tunnel syndrome may occur when an osteoid osteoma developed at the volar aspect [7]. Since the vague nature of the clinical symptoms, the diagnosis usually depends on the radiographic findings of osteoid osteoma. But in the wrist, the typical lucent nidus surrounded by a rim of uniform sclerosis is rarely seen. Thus, 25% of cases can be missed on plain radiographs alone Because of bony superposition in the carpal region or its nonspecific appearance [4, 6]. In such cases, Thin-slice CT, bone scintigraphy, magnetic resonance imaging may improve diagnostic accuracy and assist in better defining and localizing the lesion before planned surgical treatment. Thin-slice CT scan is the corner stone of the diagnosis (sensitivity 89%) [7, 4]. It shows sclerosis surrounding a lucent nidus which can be illuminated with the use of contrast. In MRI, OO

is seen as a low signal intensity area with a centrally localized signal increase of nidus. However, it lacks specificity particularly when the surrounding edema is important. Therefore, MRI and thin-slice CT centered on the lesion should be performed in patients with suspected osteoid osteoma. Three-phase technetium-99m bone scan is fairly sensitive in detecting the lesion. Histopathological patterns show small irregularities of peripheral bone trabeculation, in irregular waves, with a ring of stroma of richly vascularized connective tissue. Histological examination of the operative specimen provides the definitive diagnosis and confirms that excision was complete. The definitive treatment for osteoid osteoma is surgical excision with curettage, usually performed in open surgery, with or without associated bone grafting [7, 8]. CT-guided percutaneous thermo coagulation is gaining popularity for the surgical treatment of osteoid osteoma [7]. Arthroscopically assisted excision has been proposed for tumors located near joints [1]. Radiofrequency ablation therapy is not recommended in carpal region [9].

CONCLUSION

Osteoid osteoma of the carpus is a rare condition and produces misleading symptoms. Relief of pain with oral NSAID, most notably aspirin, should suggest the possibility of osteoid osteoma. When the diagnosis is suspected, thin slice CT scan in initial investigation would be valuable. Adding MRI improves the sensitivity of the evaluation.

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