Osteoid Osteoma of the Talus: Rare entity, Rare Presentation and a Novel Method of Management: A Case Report

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Abstract

Osteoid osteoma is a rare entity in the tarsal bones especially in children. High degree of suspicion is needed for early diagnosis and delay in diagnosis can cause significant disability. Radiofrequency ablation (RFA) is safe, minimally invasive method especially to treat juxta-articular and inaccessible lesions. Atypical Osteoid osteoma can present with clinical features similar to that of monoarticular juvenile idiopathic arthritis. This case highlights the unique features of a rare entity and a successful method of treating Osteoid Osteoma of the Talus with radiofrequency ablation after procuring tissue for biopsy by a novel method.

Case History

A 12 year-old Indian girl who is an amateur basketball player presented with pain over her right ankle for 18 months with associated swelling. Pain was of insidious onset and dull aching type and continuous. Pain got temporarily relieved with NSAID. She was not playing basketball for the past one year due to pain. Initial blood investigations revealed an Hb of 11.8 g/dl, a total WBC count of 6200/cu mm, a CRP of <3.28 and an ESR of 13 mm/h. The rheumatoid factor and anti-nuclear antibody were negative. Plain radiographs of the ankle and foot were normal. Magnetic resonance images revealed the nidus and associated sclerosis adjacent bone marrow (Figure 1). Pain at rest and during activities was scored from 0 (no pain) to 10 (maximal pain) using visual analogue scale (VAS). Her pre operative pain score at rest was 4 and at activity was 6.

Figure 1: Magnetic resonance images revealing the nidus and associated sclerosis adjacent bone marrow.

Treatment

An informed consent was obtained from patient and her father to perform a radiofrequency ablation. Procedure was done under general anaesthesia. With 3 mm CT sections the nidus was localized and core biopsy was taken from the cannulated drill. Radio frequency ablation probe (Starburst SDE, RITA Medical Solutions,
frequency ablation was performed for a period of 5 minutes at 90°C and at 60 W (Figure 2).

![Figure 2: Monopolar radio frequency ablation for a period of 5 minutes at 90°C and at 60 W.](image)

Histopathological examination showed abundant osteoid in a fibrovascular stroma. The trabeculae were reamed by prominent osteoblasts with no mitotic activity. The diagnosis of osteoid osteoma was confirmed. Preoperative visual analogue score (VAS) for pain was 4 at rest and 6 on activity. At first post operative day VAS at rest improved to 0 and VAS at activity improved to 2. At 6 months post operative follow up she continued to have no pain at rest and VAS on activity improved from 2 at 1st post operative day to 0 on six month follow up. At the one-year follow-up, the patient was asymptomatic and had no recurrence.

**Discussion**

Talus is a rare location for osteoid osteoma and a high degree of suspicion is needed for diagnosis. A diagnosis of osteoid osteoma should be considered in case of chronic ankle pain that got subsided on taking NSAIDS and when the imaging is not specific. Snow et al. in there series of 5 patients with osteoid osteoma took an average of 2.5 years for diagnosis [10]. The lesions may eventually become asymptomatic after a mean of 3 years of non-operative treatment [11]. Radiofrequency ablation under CT guidance is a novel treatment option, but the disadvantage of RFA is biopsy tissues cannot be obtained. Atypical osteoid osteomas have different clinical and radiological findings and they are rarely seen in feet. For talar osteoid osteoma the non-specific features includes synovitis and stiffness. Diagnosing osteoid osteomas in the small bones of the hands and foot is difficult. Early diagnosis enables early treatment and avoids unnecessary suffering and late complications. RFA is an alternative to surgical excision in the periarticular region with fewer complications and less hospital stay compared with surgical exposure and use of a large cannulated drill bit can ensure the biopsy specimen.

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**A Disclosure / Conflict of Interest Statement**

- None of the authors of this paper has a financial or personal relationship with other people or organizations that could inappropriately influence or bias the content of the paper.
- It is to specifically state that "No Competing interests are at stake and there is No Conflict of Interest" with other people or organizations that could inappropriately influence or bias the content of the paper.

**References**