



OSTEOID OSTEOMA- A CASE REPORT SHANMUGANATHAN

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Abstract : ABSTRACT Osteoid osteoma is a bone forming benign tumour of osteoblast according to the WHO classification⁵. It consists of a radiolucent nidus surrounded by a radio dense bone. It is most common in diaphyseal region. We present a case of 30 years old male with co pain at the left thigh for the past 11 months which worsened during the night hours not associated with fever, not radiated to knee or leg, relieved on taking analgesics. On clinical examination, the patient had no clinical finding except a minimal muscle wasting on anterior compartment of the thigh. X- Ray of the left thigh AP and Lateral view were taken, which showed a radiolucent nidus surrounded by radio dense bone. This finding was confirmed with CT scan of the left thigh. Through the anterior approach the tumour site was exposed, tumour site was confirmed with the C-Arm, the cortex over the nidus was drilled around the margins of the tumour. The drilled cortex removed by Deroofing². Then the tumour was curetted out. The margins and the base were thoroughly curetted. Removal of the nidus confirmed with C-arm intraoperatively. Post operatively, X- ray of thigh AP and lateral view were taken which confirmed the complete curettage of the tumour. Biopsy of the specimen showed histological picture of osteoid osteoma. Post operatively the patient completely relieved of the symptoms. The patient followed up at 10 weeks later. That time patient resumed his duty as an office assistant. He had no pain at the left thigh. This time the X ray CT scan showed no recurrence, no pathological fracture, with minimal callus formation and remodelling at the site.

Keyword : KEY WORDS Proximal femur, Nidus, Osteoid Osteoma, Curettage.

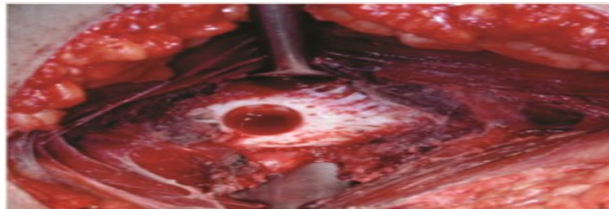
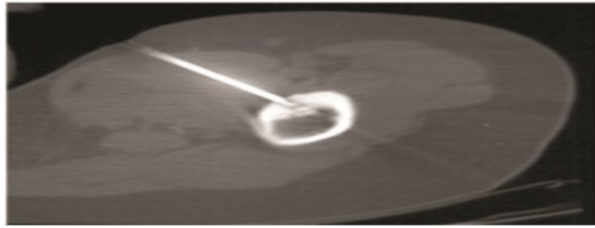
INTRODUCTION:

Osteoid osteoma, was originally described by Jaffe in 1935¹. It is a bone forming benign tumour of osteoblast, consisting of well demarcated radiolucent 'nidus', < 1.5 cm, surrounded by radiodense bone. They are differentiated from osteoblastomas by the "size of the nidus". McLeod *et al.* defined the lesions with a diameter of <1.5 cm as osteoid osteoma and those with a diameter of >1.5 cm as osteoblastoma⁶.

There are three types including cortical, cancellous and periosteal. Among this cortical type is the most common one. The 'nidus' contains high local concentrations of prostaglandins, which are considered to generate intense peritumoral reaction and to be related to the pain. It is most common in second and third decade of life with male female ratio=3:1. It consists of 10 -13 % of all benign bone tumours. It is most common in femur (35%), Tibia (20%), Humerus (10%). Baruffi *et al.*, in 2001, described that Del (22)(q13.1) leads to defective YWHAH gene which codes for the dimeric phosphoserine-binding proteins that participate in signal transduction and checkpoint control pathways⁷. This lesion leads to inhibition of apoptosis which in turn leads to tumour growth. Macroscopically it is red/brown in colour with gritty consistency. Microscopically it consists benign

Osteoid which is lined by the osteoblasts intermingled with vascularised connective tissue⁵. X ray is the gold standard investigation of choice⁴. Other

investigations are CT scan and MRI Scan.³ Treatment options are long term NSAIDs, Curettage, En-block resection, Percutaneous radiographic ablation, CT guided endoscopic removal, Percutaneous excision, MRI guided Cytotreatment. In the technique of radiographic ablation, the CT-guided core needle biopsy is initially done after which a radiofrequency electrode is inserted through the cannula of the biopsy needle. The temperature at the tip of the electrode is maintained to 90°C for 6 minutes, this high temperature causes the tumour ablation^{9,10}. In our patient we have done curettage of the tumour. This procedure relieved the symptoms in the immediate post operative period itself. The patient was followed 10 weeks later. By this time patient resumed duty. X ray and CT scan of the left thigh was done which showed callus formation and remodelling at the tumour site. There was no recurrence and pathological fracture.



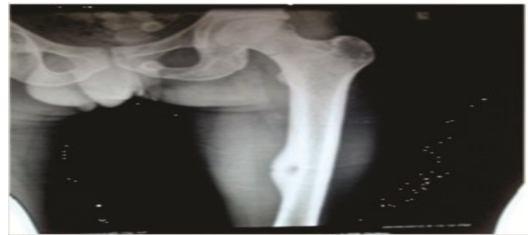
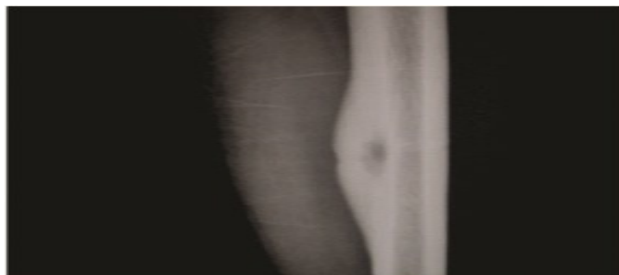
Radio ablation of Osteoid "Nidus" after removal of Osteoma. Cortex with burr Case Report

A 30 years old male from the Dindigul district of Tamilnadu, had been admitted with H/o Pain at left thigh for the past 11 (Eleven) months, which worsened during the night, not associated with fever, not aggravated on weight bearing, not radiated to knee, leg, but relieved ON TAKING ANALGESICS. Patient have no h/o trauma, no h/o of fever, no h/o loss of appetite, no h/o loss of weight, no h/o pain in the other parts of the limb and in other limbs. Patient was clinically examined found to have no swelling in the left thigh, but having minimal muscle wasting at the anterior compartment of the thigh.



Minimal muscle wasting at left thigh.

His investigations total count, differential count, ESR, and blood level of the CRP was within normal limits. X-ray of the left thigh showed 1 cm sized radiolucent "nidus" surrounded by the radiodense new bone formation, at the medial aspect of the proximal 1/3 of the femur. CT scan of the left thigh showed "nidus" with surrounding radiodense bone. With these clinical features, x-ray, and CT finding we had provisionally made the diagnosis¹¹ of **OSTEOID OSTEOMA** of left femur.

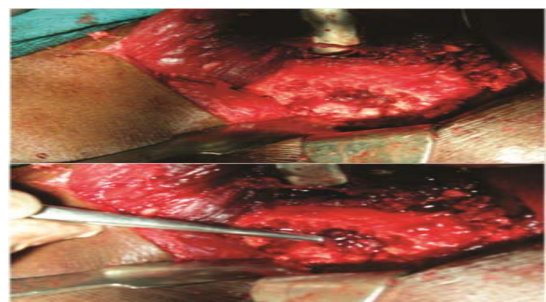


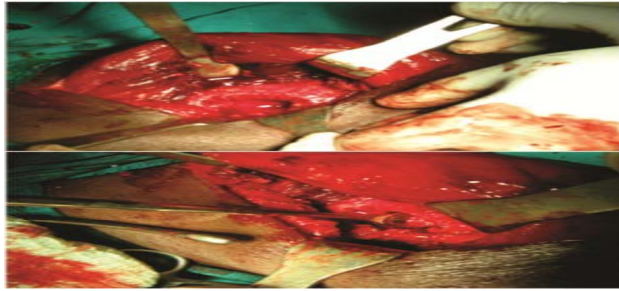
Radiolucent "nidus" with surrounding radiodense bone.

CT scan shows the "nidus" and surrounding



radiodense bone. We have planned with our available facilities for DEROOOFING the cortex over the tumour mass and CURETTAGE⁸ of the tumour from the tumour cavity. Patient was put in supine position. The tumour site was approached in anterior approach. The tumour site was confirmed with C- Arm guidance. The cortex over the tumour was found to be thickened. Cortex over the tumour was drilled along the margins of the tumour. Cortex over the tumour was deroofed, then the tumour mass curetted out. The margins and base of the tumour were thoroughly curetted. Thorough wash was given with hydrogen peroxide and normal saline. The tumour base inspected and found to have no remnant. It was confirmed with C-Arm. Post operatively X ray of the left thigh was done. It showed no remnant of the tumour. Histological examination showed the benign Osteoid which was lined by the osteoblasts intermingled with vascularised connective tissue⁵. POST OPERATIVELY the patient was completely relieved of symptoms. Pt was followed up 10 weeks later. At the time patient resumed his duty. The patient did not have any pain at left thigh. The x ray and CT scan of the left thigh showed minimal callus formation and remodelling at the tumour site without any recurrence and pathological fracture.





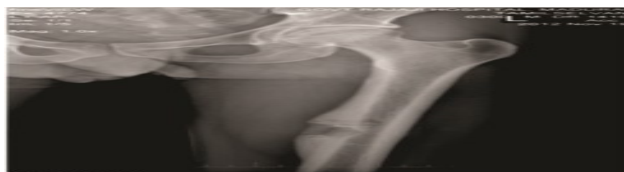
Tumour site exposed after 'deroofting' the cortex, then curetted out.



Immediate post operative x ray showing no "nidus"



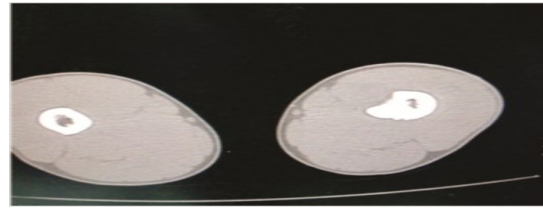
Antero posterior and Lateral views(When comparing)



Immediate post op. X-ray 10 weeks follow up x-ray Showing the remodelling and callus Formation



Immediate post op. 10 weeks follow x ray



10 weeks follow-up CT with 3D reconstruction shows no recurrence, no pathological fracture

DISCUSSION:

It is important to recognize this uncommon entity to avoid the morbidity associated with prolonged delay in diagnosis. We have diagnosed the case at the earliest based on the clinical features, x- ray and CT scan. The Brodies abscess, Ewings sarcoma, Garre's osteomyelitis, and Chronic osteomyelitis with ring sequestrum are the differential diagnosis of the osteoid osteoma^{11,14}. All the conditions were ruled out according to their clinical features. Immediately after the diagnosis we planned "curettage" of the tumour with available facilities in our set up. Even though minimally invasive procedures like radiofrequency ablation are being done in many centres, "curettage" still having its role. Because this procedure is simple and less time consuming. This procedure does not need any special instruments. In our patient curettage was done after reaching the tumour site through the anterior approach. Patient relieved off the symptoms in the immediate post operative period itself. According to Daniel et al. most striking clinical feature *Pain* immediately ward off after Curettage or En block excision or Radiographic ablation^{10,12}. Daniel I Rosenthal et al. stated that *Treatment is completed* only when the patient completely relieved of the symptoms. Post operative complications were rare in minimally invasive methods. Post operative pathological fracture is less prone to occur in our patient also, because there was no excess bone resection done here as usually done in the en bloc resection. We have removed only the cortex over the tumour. Theoretically, Osteoid osteoma has the recurrence rate from 5 to 12%. But Ward et al reported in a study with 15 patients who were treated either using a high-speed burr or by removing the 'nidus' with a curette¹⁵, that there was no recurrence following either the technique. Sluga et al also described no difference in recurrence either following the curettage or radiographic ablation². They concluded that, from an oncological point of view, removal of the 'nidus' is the essential feature decides the prognosis not only the technique

CONCLUSION:

Minimally invasive techniques are now generally accepted as being the procedure of choice in deeply situated, inaccessible tumours. When the tumour is readily accessible in the femur, tibia, hand or foot, Curettage through a small skin incision is the choice, because this method is simple, less time consuming and is no more invasive than other techniques. .

For these reasons Curettage as a traditional surgical procedure is a procedure of choice still now^{2,8}

En-bloc resection, because of the high incidence of associated complications, should only be reserved for recurrent lesions. References:

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