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## A Rare Case of Osteoid Osteoma in Second Sacral Arch.

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### ABSTRACT

The name Osteoid Osteoma was first proposed by Jaffe to designate a benign condition of the bone characterized by the formation of a nidus of vascularized osteoid tissue with sclerosis of surrounding bone<sup>7</sup>. The incidence of osteoid Osteoma in vertebrae is about 0-25% with average of about 10%<sup>6</sup>. Patients with Osteoid Osteoma complain of a typical history of pain at night, subsiding on consuming salicylates or NSAIDS. Our patient had a history of chronic back pain more at night associated with radiating pain to his right lower limb mimicking IVDP for which he was treated elsewhere with medication and physiotherapy for 2 years. MRI of the lumbosacral spine was suggestive of infection and when a CT guided biopsy was being done, he was incidentally diagnosed to have osteoid osteoma. He was treated as chronic lumbosacral strain; Disc prolapsed, and even suspected to have tuberculosis of the sacrum after an MRI scan report suggested infection. On examination of the patient, he had point tenderness over the right side of the Sacrum and over the right Sacroiliac joint. Straight leg raising test was negative, Hips were found to be normal. Spinal movements were normal. No neurological deficit was noticed. Though we suspected tuberculosis after the MRI, we wanted to do a CT- guided biopsy of the lesion to prove the same. When a CT-scan was done, the typical feature of Osteoid Osteoma of the right 2nd sacral vertebral lamina was observed by the radiologist. CT-scan showed a central nidus<sup>1</sup>. Measuring <0.5mm, surrounded by sclerosed bone measuring 0.5mm , following which he was managed surgically .

**Keywords:** Osteoid Osteoma, Sacrum, Interlesional resection

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## INTRODUCTION

The name Osteoid Osteoma was first proposed by Jaffe to designate a benign condition of the bone characterized by the formation of a nidus of vascularized osteoid tissue with sclerosis of surrounding bone [7]. The incidence of osteoid Osteoma in vertebrae is about 0-25% with average of about 10% [6]. Patients with Osteoid Osteoma complain of a typical history of pain at night, subsiding on consuming salicylates or NSAIDs. Our patient had a history of chronic back pain more at night associated with radiating pain to his right lower limb mimicking IVDP for which he was treated elsewhere with medication and physiotherapy for 2 years. MRI of the lumbosacral spine was suggestive of infection and when a CT guided biopsy was being done, he was incidentally diagnosed to have osteoid Osteoma.

## CASE REPORT

Osteoid Osteoma of the Sacrum is a very rare site to present [3]. A 25year-old male a computer operator was admitted with chronic back pain and radiating pain to his right lower limb up to the foot. Pain was more at night and better with medications. During the past 4 years for the above mentioned symptoms he was treated as chronic lumbosacral strain, Disc prolapsed, and even suspected to have tuberculosis of the sacrum after an MRI scan report suggested infection. On examination of the patient, he had point tenderness over the right side of the Sacrum and over the right Sacroiliac joint. Straight leg raising test was negative, Hips were found to be normal. Spinal movements were normal. No neurological deficit was noticed. Though we suspected tuberculosis after the MRI, we wanted to do a CT- guided biopsy of the lesion to prove the same. When a CT-scan was done, the typical feature of Osteoid Osteoma of the right 2nd sacral vertebral lamina was observed by the radiologist. CT-scan showed a central nidus<sup>1</sup>. Measuring <0.5mm, surrounded by sclerosed bone measuring 0.5mm.



Figure 1: Xray of the sacral region

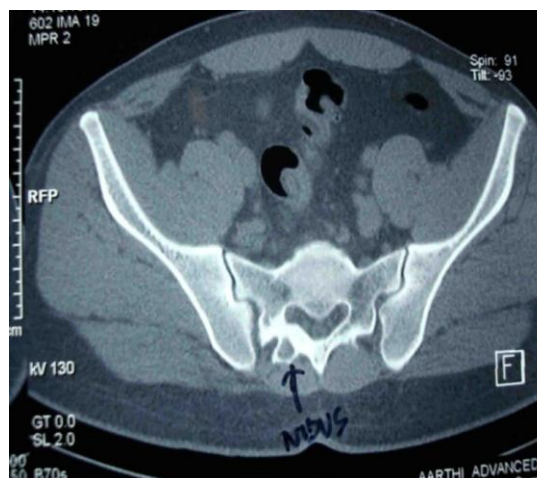


Figure 2: CT showing nidus in the second sacral arch .

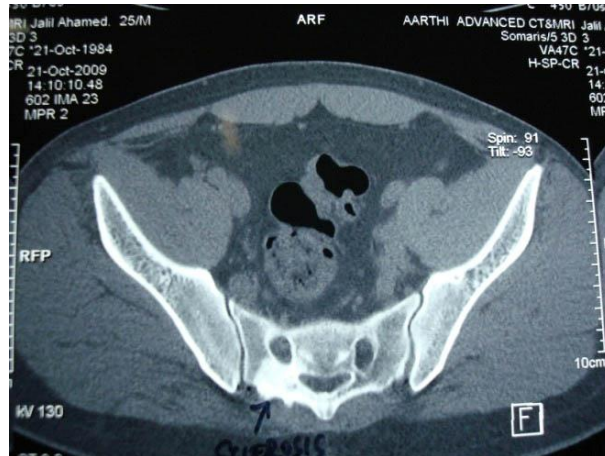


Figure 3: CT showing region of sclerosis in second sacral arch .

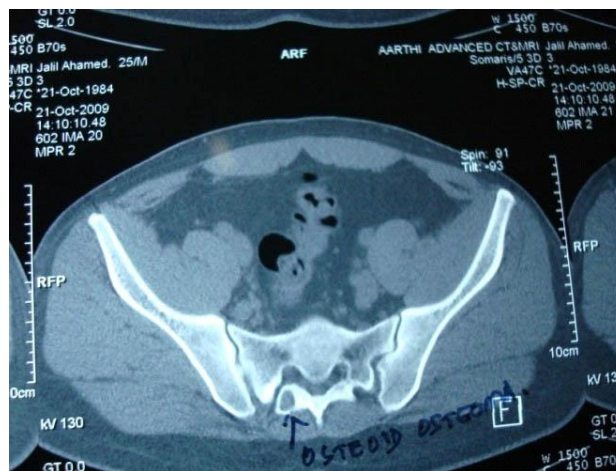
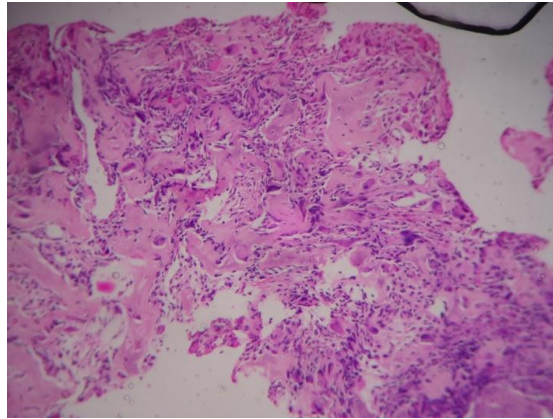


Figure 4: CT confirming the presence of Osteoid osteoma .

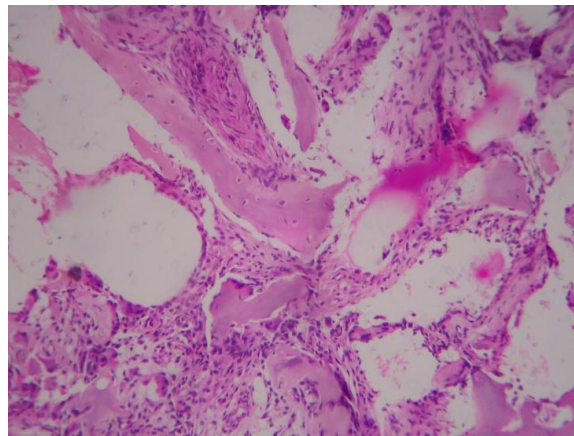


Figure 5: Post surgery CT showing the complete removal of previous osteoid osteoma .

The lesion over the S2 vertebral lamina on the right side was removed by Interlesional excision. The under lying nerve root was also exposed and was found to be free. The specimen was sent for histopathology. Patient had complete relief of pain following surgery. Repeat CT- scan of the Sacrum showed complete removal of the lesion.



**Figure 6: Histopathology of osteoid osteoma .**



**Figure 7: Histopathology of Osteoid osteoma .**

### **DISCUSSION**

Osteoid Osteoma is a benign osteoblastic tumor that Jaffe described it in 1935 and was the first to recognize it as a unique entity [7]. Osteoid Osteoma is usually smaller than 1.5-2 cm and characterized by an osteoid-rich nidus in a highly loose, vascular connective tissue. The nidus is well-demarcated and may contain a variable amount of calcification. Surrounding the nidus is a zone of sclerotic but otherwise normal bone [5]. Approximately 0-25% of osteoid Osteoma involves the spine. Involvement here most commonly manifests as painful scoliosis, but painless conditions can also occur. 50% of lesions occur in the cervical spine, and up to 78% of osteoid Osteoma in the lumbar spine is associated with scoliosis.

Osteoid Osteoma of Sacrum is a very rare site of occurrence [3]. Very few cases have been reported in literature. Osteoid Osteoma of sacrum Poses a challenge in diagnosis as it may mimic a disc prolapsed or an infection clinically, as in our patient who's symptoms were low back pain with radiculopathy [3]. All Osteoid Osteoma irrespective of the site of the lesion present as chronic unrelenting pain especially more at night. The pain is typically relived by NSAID. Our patient also had similar symptoms.

Blood Investigations are usually normal. X-ray of the Sacrum did not reveal any abnormality but sometimes an area of sclerosis can be seen at the site of lesion. Bone scan can be done in suspected cases when radiographs are negative, but it aids in diagnosis though not specific. CT-scan is the ideal radiological investigation which gives a clear picture about the lesion [1].

CT is helpful in precisely delineating the nidus. When residual or recurrent tumor is present, or when the tumor is located in a critical area (eg, spine or femoral neck). CT increases specificity for calcified lesions and allows for the visualization of the nidus. It is helpful in precisely defining the location of the tumor and the extent of osseous involvement, especially in areas deep in complex joints such as the hip.



## CONCLUSION

CT is more accurate than MRI. In our patient MRI- report suggested infection and not Osteoid Osteoma. To date, CT scanning is the primary investigational tool for the definitive diagnosis of osteoid osteoma [1].

CT-scan proved invaluable in diagnosis of Osteoid Osteoma in our patient as well. The treatment of Osteoid Osteoma involves complete removal of the central nidus. Interlesional resection of the lesion is the best way to treat Osteoid Osteoma, This procedure also involves removal of normal bone as well. This procedure has its own limitations because; this procedure cannot be done in areas difficult to access. The latest treatment involves insertion of radiofrequency probe into the lesion [4]. The temperature at the probe tip reaches 90<sup>0</sup> C for 4minutes, this heat destroys the nidus. Minimally invasive surgical treatments include radionuclide-guided excision, CT-guided percutaneous excision, percutaneous laser photocoagulation and percutaneous radiofrequency coagulation. Success rates can reach approximately 100%. Disadvantages include incomplete resection in 35% of patients, persistence of symptoms in 23%, and recurrence in 12%.

Patient had complete relief from pain following surgery. He had no radiating pain following surgery. The repeat CT-scan showed complete removal of the lesion. Histopathology report was suggestive of Osteoid Osteoma. Osteoblastoma and Osteoid Osteoma have similar histological features with different natural histories [8].

## REFERENCES

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