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Original Research Article.

Management of Osteoid Osteoma: An Institutional Experience

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ABSTRACT

Background: Osteoid osteoma is a benign osteoblastic tumour characterised by an osteoid rich nidus in a highly loose, vascular connective tissue. They are generally smaller than 1.5 to 2 cm in size. It is reported to occur in the cortex of the shaft of long bone in about 80 to 90% cases. Osteoid osteoma of skull bone is rare. It may occur at any age, most commonly between the ages of 4 and 25 years old. Males are more commonly affected than females. Many patients achive pain relief with medical management. Surgical intervention is indicated for patients in whom conservative management fails. Complete surgical excision of the nidus is the treatment of choice as it is the most predicatable way to cure osteoid osteoma and should be the goal of surgical intervention.

Aims: To study surgical outcome for osteoid osteoma of skull – An observational study

Methods and Materials: It was a retrospective study conducted in department of neurosurgery at a tertiary care centre in Ahmedabad – Gujarat from January 2009 to December 2014. All patients who underwent surgical excision for osteoid osteoma of skull bone at deparment of neurosurgery were included in the study and patients who lost to follow up were excluded. A total of 21 patients were included in our retrospective analysis. Age, gender, clinical features and surgical outcome were considered for analysis. The result of the study was analysed by appropriate statistical tool.

Results and Conclusion: In our study, majority of patients were from first and second decade of life. Males were more commonly affected than females. Pain and swelling of skull bone was the only complain in all cases. There was no recurrence in any case after complete surgical excision.

Key words: Osteoid Osteoma; Benign Tumour; Skull Bone; En Block Excision.

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INTRODUCTION

Osteoid osteoma is a non cancerous bony tumour that can occur at any age but most commonly in children and young adults. It's an extremely slow growing tumour and do not metastasize. It occurs more commonly in males. It usually develops in the long bones of the lower extremeties. Osteoid osteoma is a benign osteoblastic tumour characterised by an osteoid rich nidus in a highly loose, vascular connective tissue. Osteomas of skull are rare but if present is frequently found in the frontal-ethmoid region.[1,2]

In the temporal bone, the external auditory canal is the predominant location, rarely present in the mastoid, the squamous portion of the temporal bone, inner ear canal and middle ear.[3]

AIM

To study surgical outcome for osteoid osteoma of skull – An observational study

METHODS AND MATERIALS

It was a retrospective study conducted in department of neurosurgery at a tertiary care centre in Ahmedabad – Gujarat from January 2009 to December 2014. All patients who underwent surgical excision for osteoid osteoma of skull bone at department of neurosurgery were included in the study and patients who lost to follow up were excluded. A total of 21 patients were included in our retrospective analysis. Age, gender, clinical features and

surgical outcome were considered for analysis. The result of the study was analysed by appropriate statistical tool.

Table 1: Clinical Data and Outcome

Parameter	No. Of Patients	Percentage
Age Incidence		
0 – 10 Years	05	23.8
11 – 20 Years	11	52.4
21 – 30 Years	02	09.5
31 and Above	03	14.3
Total	21	100.0
Sex Incidence		
Males	16	76.2
Females	05	23.8
Total	21	100.0
Clinical Presentation		
Pain	21	100.0
Swelling	21	100.0
Cranial Bone Involved		
Frontal	10	47.6
Parietal	04	19.0
Temporal	05	23.8
Occipital	02	09.5
Multiple	04	19.0
Multiplicity		
Multiple Osteoid Osteoma	04	19.0
Surgical Outcome		
Recurrence	00	00.0

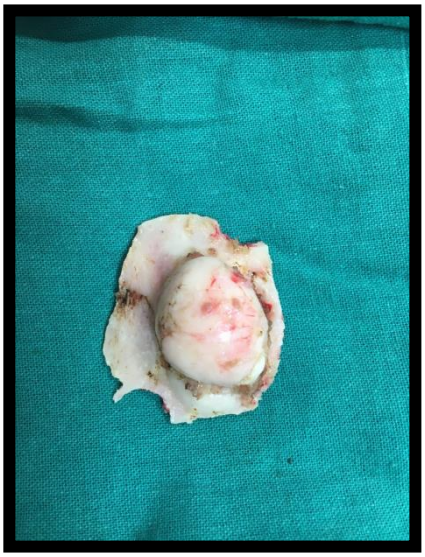

Figure 1: En block excised right temporal bony lesion – osteoid osteoma

RESULTS AND DISCUSSION

Osteoid osteoma is a benign osteoblastic tumour characterised by an osteoid rich nidus in a highly loose, vascular connective tissue.[4] The nidus may contain variable amount of calcification and is well demarcated with surrounding zone of sclerotic but otherwise normal bone.

It was first described in 1930 by Bergstrand. Jaffe in 1935 was first one to described osteoid osteoma as a distinctive benign osteoblastic tumour – a unique entity.[5] Lichtenstein in 1965, defined osteoid osteoma as a small, oval or roundish tumour-like nidus composed of osteoid and trabeculae of newly formed bone deposited within a substratum of highly vascularised osteogenic connective tissue. This lesion has been reported in almost every bone but not previously in the skull (Jaffe - 1958, Lichtenstein - 1965, Sutton - 1969).[6]

It is a common bone tumour accounting approximately one eighth to one tenth of all symptomatic benign bone tumours and about 5% of all primary bone tumours. It is generally seen in children and young adults. Literature reports that people aged 4 to 25 years are most susceptible.[7]

In our series, 76% of patients were from first two decades of life. Men are affected more frequently than women in a ratio of about 3:1 as per literature. In our series also 24% patients were female and 76% were males. No racial or ethnic predilection is noted for osteoid osteoma as per literature.

It can occur in any bone and may involve a single or several bones. In our series, 19% of patients had multiple osteoid osteoma involving multiple bone. Involment of frontal bone was commonest followed by temporal, parietal and occipital bone. It generally occurs in the epiphyseal and metaphyseal regions of both small and long bones of the axial and appendicular skeletons, especially the femur, tibia and humerus. The lower extremities are the most common site of involvement. Skull and spine are rarely involved.[8]

Symptoms of osteoid osteoma can last for days to years before diagnosis and finally surgery. Pain is the main symptom. It is continuous, deep, dull aching and sometimes intense pain of varying severity and type localized chiefly to the site of lesion. It is usually worse at night decreases in morning. The pain may disturb patient's sleep and makes them irritable and anxious. Pain tends to be relieved with NSAIDs and sometimes aggravates on consumption of ethanol. In our series, all patients presented with pain and swelling. Swelling is another common symptom which sometimes is the only presenting complain. Clinical examination shows findings that can vary in patients with osteoid osteoma. Tenderness may be present and is generally associated with subperiosteal lesion and relatively uncommon with medullary lesions. Treatment is indicated for osteomas that are symptomatic or cosmetically unacceptable. Initial treatment is non-operative with medicine consisting of aspirin or other NSAIDs.[9] Many patients achive pain relief with medical management. Surgical intervention is indicated for patients in whom conservative management fails. Complete surgical excision of the nidus is the treatment of choice as it is the most predicatable way to cure osteoid osteoma and should be the goal of surgical intervention. Wide en block resection of lesions with surrounding bone is an ideal treatment but its not always possible. The purpose is to ensure complete removal of nidus to minimize the risk of recurrence. In our series after complete surgical excision (Figure – 1), there was no recurrence seen on average follow up period of 24 months. Literature review suggested that while conventional excision therapy is reliable and effective, there are minimally invasive methods by microscope, video-assisted endoscope or percutaneous radiofrequency coagulation which results in less tissue injury and be an alternative method of management.[10] Recurrence is uncommon and malignant transformation has not been reported in the medical literature.[3]

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