CASE REPORT

OSTEOMA OF TEMPORAL BONE: A CASE OF POST AURAL SWELLING

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ABSTRACT: Osteomaare benign slow growing bony tumor predominantly occurring in long bones, rarely found in the skull. In the skull they are found most commonly in fronto-ethmoidal region. They are very rarely found in the temporal bone. We describe a case of a 32 year old female who presented with history of left retroauricular mass for the past 1 year. Radiological investigation showed osteoma of temporal bone. Confirmed postoperatively by histopathology examination.

KEYWORDS: Osteoma, Temporal bone.

INTRODUCTION: Osteomas are benign slow growing tumours of the long bones. In routine ENT practice they are commonly visualized as dense radio opaque shadows arising from within the fronto-ethmoid region. Osteoma of the temporal bone occurs infrequently, and when they occur, are most commonly in the external ear canal. Osteoma originating from the middle ear is very rare. Those from the mastoid are rarer. They are usually asymptomatic with a chronic course, and present as a hard, painless, retro auricular mass. We document such a rare presentation of osteoma arising from the mastoid.

CASE REPORT: Presenting case of a previously healthy 32-year-old woman, referred to the ENT clinic for assessment of a left retro auricular mass that had been slowly increasing in size for past 1 year. This patient was asymptomatic, but reported unsightly appearance of this mass. On examination, she was found to have a 3cm X 3cm globular hard bony swelling above and behind the left mastoid process fixed to the underlying bone. It was non-tender.

Detailed ENT examination including facial nerve function was normal. There were no bony exostoses in the external ear canal.

CT scan of the petrous temporal bones demonstrated a bone tumour arising from the left mastoid cortex with no other associated abnormality of the petrous temporal bone, suggesting a typical mastoid osteoma (Fig. 2). Surgical resection was performed under local anaesthesia via a retro auricular incision. Following skin dissection and exposure of the bone tumour, the tumour was completely resected by a mastoid drill with cutting burr. Finally the edges of the bone were polished with a round burr and the incision closed in layers. She had an uneventful postoperative period. Histopathology confirmed an osteoid osteoma.

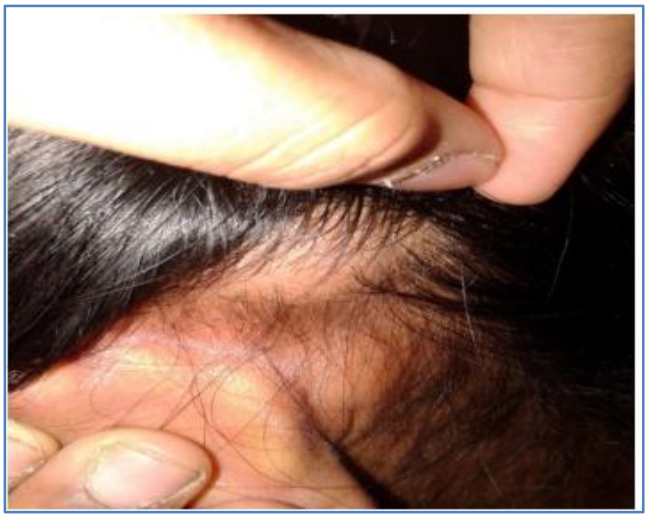

Fig. 1: Pre operatively-post aural swelling

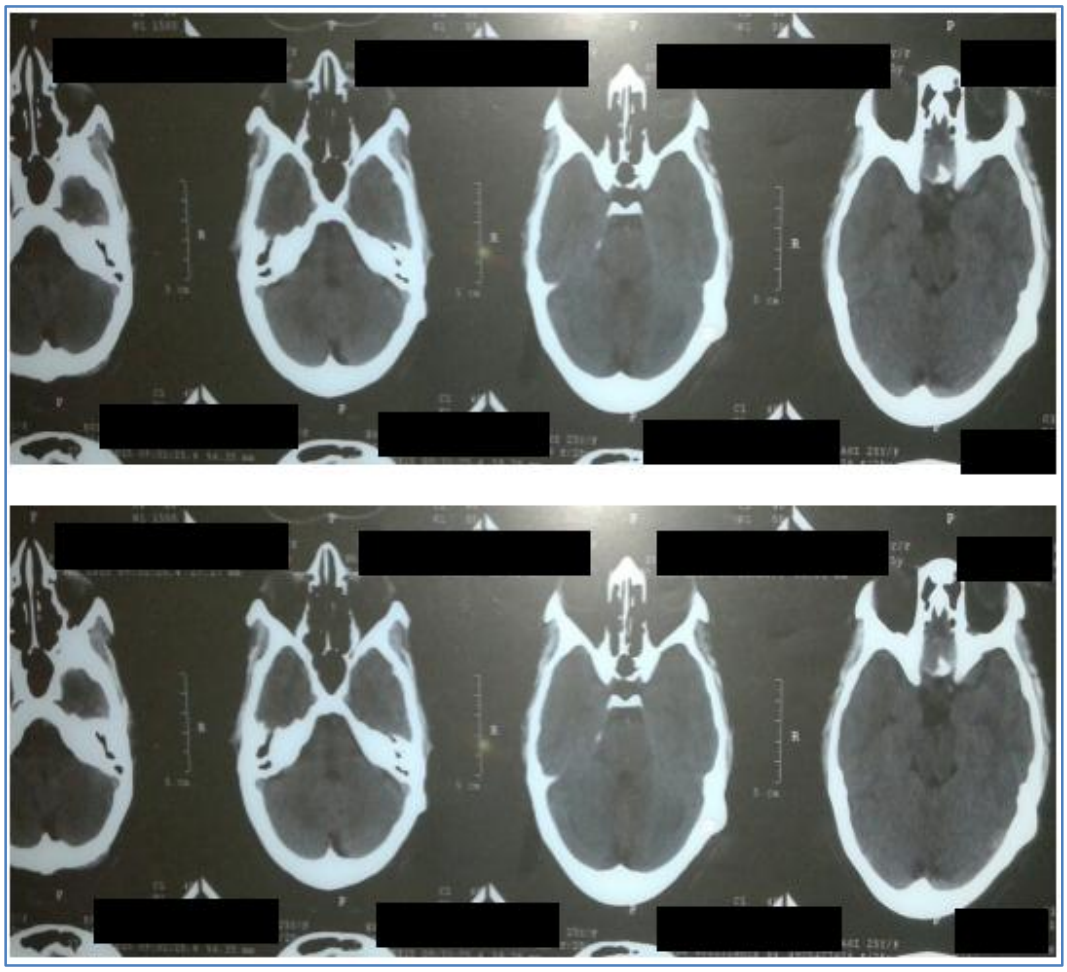

Fig. 2: CT scan of temporal bone

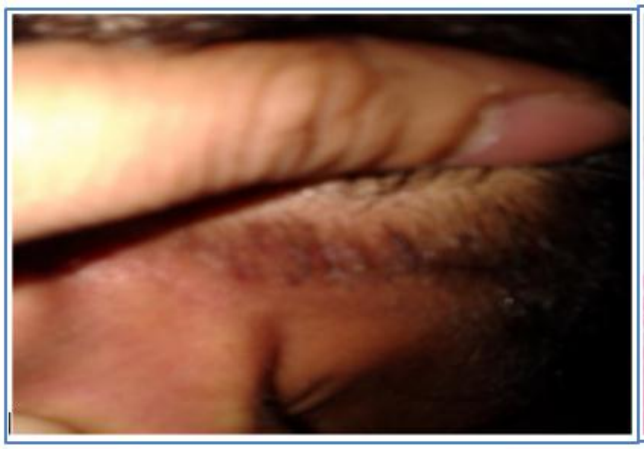

Fig. 3: Post-operatively

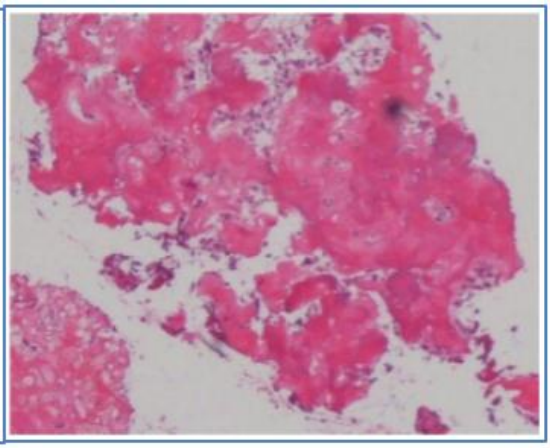

Fig. 4: Histopathological slide of the osteoma

DISCUSSION: Osteoma is a slow growing tumor formed by mature bone tissue.

Osteoid osteoma is a primary bone tumor accounting for 10% of all primary bone tumors.[1]

It mostly occur sprimarily in long bones. In the skull it mainly affects the paranasal sinus, uncommonly affects the temporal bone.

In the temporal region, osteomas are essentially reported in the external auditory canal, even more rarely in the middle ear, along the auditory canal or the styloid process, in the temporomandibular joint, in the apex of the petrous temporal bone or in the internal auditory canal,[2] and only exceptionally in the mastoid.[3] Higher incidence in female patients, predominantly in the 2nd and 3rd decade of life and is rare in puberty.[4,5]

As illustrated by the case reported, osteomas arising from outer cortex of the mastoid are associated with minimal or no symptoms. They are essentially responsible for deformity of the retro auricular region. Few cases of mastoid osteomas has been reported to cause local tenderness and interfere with wearing glasses. Rarely it may produce pain by invasion of surrounding structures or widening of periosteium. If located in the external auditory canal it may cause obstruction of the same further progressing to chronic otitis externa (30% of cases) and conductive hearing loss.[6,7] In the present case patient did not have any complaints and swelling was removed for cosmetic reasons.

While the exact etiology of osteomas is not well understood, they are thought to arise from preosseus connective tissue. There is some evidence that osteomas are of congenital nature.[8] The most widely accepted theories for the etiopathogenesis of osteomas include embryogenesis and metaplasia following recurrent local irritation and trauma.

Three types of mastoid osteomas have been described, based on structural characteristics.[9,10,11]

- Compact: The most frequent one. Comprising dense, compact and lamellar bone, with few vessels and Haversian canals system. Those with dense sclerotic bone are called ivory osteoma. Compact osteomas have a wider base and are very slow growing.

- Cartilaginous: Comprising bone and cartilaginous elements.
- Spongy: Rare type. Comprised by spongy bone and fibrous cell tissue, with tendency to expand to the diploe and involving the internal and external lamina of the affected bone, have bone marrow and also known as cancellous or osteoid osteomas. They are more likely to bepedunculated and grow relatively faster.
- Mixed: Mixture of spongy and compact types.

Osteoma should be differentiated from exostoses. Osteomas are bony growths that are single, unilateral and pedunculated and arise from the tympanosquamous or tympanomastoid suture lines laterally, whereas exostoses are multiple, usually bilateral and broad based and are found medial to the sutures of the temporal bone.[12]Osteomas are true bone tumors and exostoses are deemed to be a reactive condition secondary to multiple cold-water immersions or recurrent otitis externa. Disagreement still exists whether external auditory canal exostoses and osteoma should be considered as separate histopathological entities. JE Fenton et al in their study have concluded that they cannot be differentiated on routine histopathological examination.[13]Osteoma occurrence may be singular or associated with a syndromic entity i.e Gardner's syndrome, which has been characterized by multiple intestinal polyps, epidermoid inclusion cysts, fibromas of the skin and mesentery and osteomas. Osteomas in Gardener's syndrome have a predilection for membranous bones and as such the mandible and maxilla are more commonly involved.[14]

Non-contrast computed tomography of the petrous temporal bones is the examination of choice for diagnosis. It reveals a rounded bone lesion of the outer cortex of the mastoid, with regular margins, with a pedunculated or sessile implantation base. Superficial mastoid osteoma presents no signs of intrapetrosal extension and the mastoid air cells remain perfectly aerated. Rare cases, extension medially into the petrous temporal bone adjacent to the facial nerve, lateral semicircular canal or ossicles have been observed. In such cases, imaging is mandatory before considering surgical resection.[2,3,15-17] Imaging is also useful to define the differential diagnosis between osteoma and other mastoid bone tumours, especially osteosarcoma, bone metastases, multiple myeloma, giant cell tumour, lesions encountered in Paget's disease or fibrous dysplasia.[2,3]

Treatment is indicated for osteomas that are symptomatic or cosmetically unacceptable. Excision or drilling of superficial lesions of the mastoid and squama is a simple procedure. At surgery, since the lesions are always limited to the external cortex a cleavage plane is always encountered when tumor meets normal bone.[18] In mastoid osteomas extending into the fallopian canal and bony labyrinth, complete excision is not indicated since there may be damage to these structures. Follow up is needed in cases where partial excision is done or where expectant treatment is adopted. Aretroauricular subcutaneous depression may be observed after the operation.[19]

CONCLUSIONS: Osteomas are infrequent tumor of the temporal bone. When present they should be treated as per the symptoms. Osteomas present on the mastoid or squamous portion of the temporal bone are dealt for cosmetic purposes.

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