

Mastoid Osteoma – a rare case of painless tumor.

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ABSTRACT

Osteoma of mastoid bone is a rare benign osteogenic tumor of the temporal bone. These are common in the frontoethmoid region and very rare in the temporal bone in which the external auditory canal is the predominant location. Extra-canalicular osteomas of the temporal bone can present in the mastoid, squamous part of the temporal bone, internal auditory meatus and the middle ear. Only 150 cases were reported between 1861 and 2015. More reporting of such cases can be helpful in formulating the guidelines for the treatment of Mastoid osteoma. We report one such case.

Key words: Osteoma, Mastoid, Temporal bone, Painless tumor of mastoid.

INTRODUCTION

Osteomas are benign bony tumors of the head and neck, are frequently found in the frontoethmoid 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 ear³. These are benign tumors of mesenchymal osteoplastic nature composed of well-differentiated osseous tissue with laminar structure⁴. When located in the mastoid they are solitary, sessile or pedunculated and normally they progress to extra-cranial growth^{5,6,7}. Temporal bone osteomas in general constitute 0.1% to 1% of all benign tumors of the skull⁸.

Causes of mastoid osteoma reported in the literature included trauma, previous surgery, radiotherapy, chronic infection, and hormonal factors with dysfunction in the hypophyseal gland⁹.

CASE REPORT

A 20 year-old male presented with a swelling behind the left ear of 8 months duration. It was painless, gradually increasing in size. There was no history of trauma, headache, hearing impairment, otorrhea, dizziness, vomiting. Ear, nose and throat examination was normal. On local examination (Fig.1) a smooth, round, bony hard, non-tender swelling over the left mastoid bone of about 2.5 X 3 cms, skin over the

swelling was free, and the mass was fixed to underlying bone. C.T. scan (Fig.2) of the left temporal region revealed a radio dense, broad based swelling in the left mastoid, originating from the outer table of skull with no evidence of invasion of the inner table or intracranial extension. A diagnosis of Mastoid osteoma was made. Surgical excision of the tumor was planned under local anesthesia. A modified retro auricular incision was given and the osteoma was exposed. The tumor (Fig. 3) was found attached to the outer cortex of the mastoid bone not involving the mastoid air cells and the posterior wall of the bony external auditory canal. The osteoma was separated from the periosteum and was chiseled out in total. The raw edges of the mastoid bone were smoothed with a diamond burr and the wound closed in layers. The specimen (Fig. 4) measuring 4 x 3 x 2 cms, was sent for histopathological examination which revealed a circumscribed bony lesion comprised of dense, mature, predominantly lamellar bone suggestive of osteoma. Sutures were removed after a week and the postoperative period was uneventful



Fig 1. Osteoma arising from left mastoid

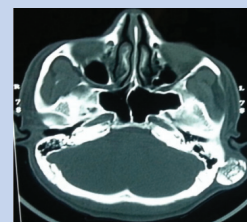


Fig 2. Osteoma in axial cut CT scan



Fig 3. Exposed mastoid osteoma



Fig 4. Excised osteoma measuring 4x3x2

DISCUSSION

Mastoid osteomas are usually asymptomatic, but they may enlarge to cause cosmetic problems¹⁰. Pain occurs when the growth of the lesion involves the inner table of the temporal bone¹¹. Pain may be localized in the ear region, the tympanic membrane or in the neck.

Theories for the etiopathogenesis of osteomas include embryogenesis and metaplasia following recurrent local irritation and trauma. Osteomas of the skull are classified as; a) Compact b) Cancellous and c) Mixed^{4, 12}. Clinically it is not possible to differentiate them due to the similarity in symptoms and objective signs. Compact osteomas are the commonest of all the three varieties. Osteomas mainly occur in the mature bone. Macroscopically, it can be seen as a zone of distinct homogenous hyperostosis with features of dense lamellar bone growing centrifugally without any mass effect. Microscopically, a sclerotic, dense lamellar bone with organized Haversian canals can be seen^{13,14}. Osteoblasts, fibroblasts and giant cells with no hematopoietic cells make up the intratrabecular stroma¹³. Cancellous osteomas have trabecular bone with marrow and are also known as spongy or osteoid osteomas which are composed of lamellar bone. They are more likely to be pedunculated and grow relatively faster than compact osteomas. Osteomas are true bone tumors. Exostoses are thought to be a reactive condition secondary to multiple cold-water immersions or recurrent otitis externa.

Osteoma occurrence may be syndromic or non syndromic. They may occur as a feature of Gardner's syndrome which is characterized by multiple intestinal polyps, epidermoid inclusion cysts, fibromas of the skin and mesentery and osteomas. Osteomas in Gardner's syndrome have a predilection for membranous bones, and as such the mandible and maxilla are more commonly involved^{15,16}.

Differential diagnosis of mastoid osteoma includes osteoblastic metastasis, osteosarcoma, ossifying fibroma, isolated eosinophilic granuloma, Paget's disease, giant cell tumor, calcified meningioma, hemangioma, and monostatic fibrous dysplasia. These lesions however are less demarcated in comparison to mastoid osteoma and are usually distinguished by radiological, anatomical and histopathological studies^{4,18,19}. Heterogenous, poorly delineated lesions with rapid growth suggest malignancy¹².

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 bone⁷. The periosteum over the osteoma is removed along with the tumor. If the tumor invades the diploe or the inner table, the lateral sinus and middle fossa

dura may be exposed¹⁷. Prognosis has been considered to be good in an aesthetic and curative point of view when subjected to surgical excision. Recurrence is uncommon and malignant transformation has not been reported in the medical literature¹.

CONCLUSION

We report a case of Mastoid osteoma because of its rarity, presenting as a solitary tumor in a young man. Though majority of the Mastoid tumors are rare and benign, it is advised to investigate properly by CT scan and subject them for histopathological examination to differentiate them from other benign and malignant lesions.

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