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Case Report

Mastoid Osteoma: A Case Report

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ABSTRACT

Mastoid osteoma is a rare benign neoplasm of mesenchymal origin. Osteomas of the temporal bone are infrequent, and these mastoid osteomas are a definite rare occurrence. These tumours can present with cosmetic deformity and sometimes with pain. In this report we describe a patient with mastoid osteoma who presented with cosmetic deformity and experienced retro auricular pain.

Keywords: **Osteoma, Mastoid, Temporal Bone**

INTRODUCTION

Osteomas are slow growing bony tumours. The osteomas in the region of head and neck are frequently found in frontal and ethmoidal sinuses but rarely in temporal bone (1). Temporal bone osteomas constitute around 0.1-1% of all benign tumours of the skull (2). These tumours are generally asymptomatic and incidentally found on imaging studies (1). Mastoid osteoma is usually a single lesion and it grows from the outer table of mastoid cortex (3). Osteomas are composed of well differentiated mature osseous tissues with predominant laminar structure. Three types of mastoid osteomas are histologically recognised as compact, spongiotic and mixed (4). CT scan is the most useful radiological investigation, both in making a diagnosis and facilitating precise planning of surgical resection (2). The treatment of choice for the osteoma is surgical resection. Surgery is indicated for osteomas that are with symptomatic or cosmetically unacceptable lesions (2-4).

CASE REPORT

A 30-year-old female patient had right post auricular swelling. She noticed that the swelling was slowly increasing in size with vague pain for more than a year. She did not complain of any hearing loss, vertigo or any other systemic symptoms. There was no history of any trauma as well. Upon examination, she was found to have non-tender bony hard swelling of the size of 2.5x2.5 cm in the right post auricular region. Meanwhile, the rest of the ENT examination and audiometry were normal with intact facial nerve function. CT scan demonstrated bony protrusion at the right temporal bone which is adjacent to the right mastoid air cells with no intracranial extension [Figure 1]. Surgical resection was carried out under general anaesthesia. Modified post auricular incision was made over the lesion and excised entirely by drilling and chiselling. The tumour was found attached to the outer cortex of the mastoid bone, but it did not involve the mastoid air cells. Post-operative period was uneventful with no recurrence in the one-year follow up. Histopathological examination [Hematoxylin-eosin stain, magnification x 40] demonstrated sheets of dense cortical lamellar bone with no fibrosis and Haversian canal system [Figure 2]. These features were consistent with osteoma.

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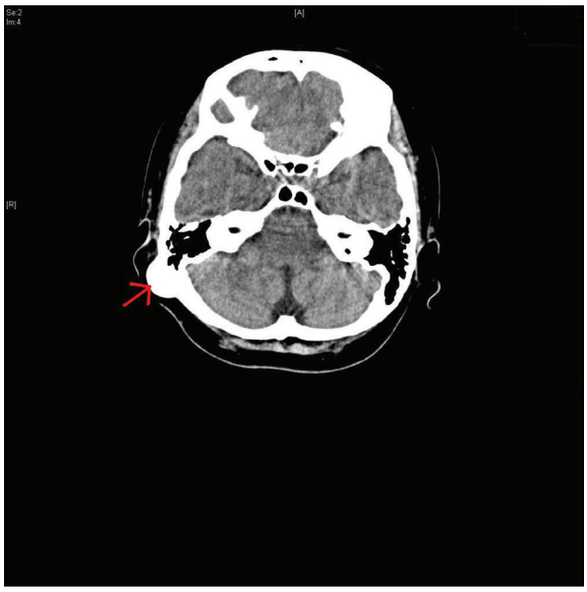

Figure 1. Axial section of CT scan showing osteoma at the right mastoid region.

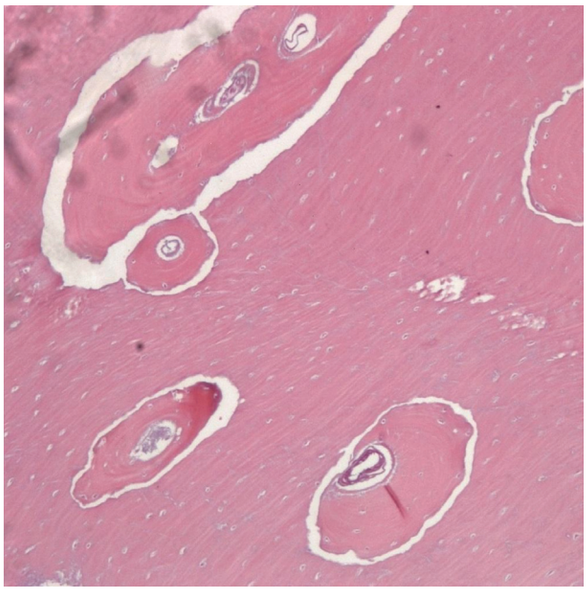

Figure 2. Microphotograph showing Hematoxylin-Eosin slide with magnification of X25

DISCUSSION

Osteoma is a benign osetogenic tumour that frequently involves long bones, vertebral column and extremities, and it is uncommon in the skull (5). External auditory canal is the predominant location of temporal bone osteoma, but it rarely presents in the mastoid. Generally, osteomas of the temporal bone occur in younger individuals. These rare mastoid osteomas are commonly seen among females (3). The specific aetiology of the mastoid osteoma is still undefined, with various aetiologies such as trauma, surgery, radiotherapy, chronic infection and pituitary gland dysfunction being commonly reported in the literature (3-5).

In general, osteoma occurrence may be syndromic or non-syndromic. These may occur as a result of Gardener's syndrome, which is characterised 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 as mandible and maxilla (3,5).

Osteomas are slow growing tumours and these can remain stable for years (2). Mastoid osteomas are usually asymptomatic, but these tumours can cause pain and cosmetic deformity as well. The pressure induced pain can be localised to the ear or neck (4). Pain also occurs when the growth of the tumour involves the inner table of the temporal bone. In the case of our patient, retro auricular pain may be due to the irritation of the greater auricular/occipital nerve. When the osteoma infiltrates the cortex, it can cause external auditory canal obstruction and conductive hearing loss. Meanwhile, osteoma of the inner ear can present with hearing loss, tinnitus and vertigo (3).

CT scanning is the imaging modality of choice for mastoid osteoma which demonstrates an osteoma as well demarcated, dense outgrowth of sclerotic lesion[2]. In rare cases, the osteoma can extend medially adjacent to facial nerve, lateral semicircular canal or ossicles. The anatomical relationship with these structures can be determined through CT scan prior to surgical resection. Thus, CT scan enables the right diagnosis and appropriate surgical planning to be done.

Histologically, there are three different types of osteoma: compact, spongy and mixed. Compact osteoma is dense and ivory like neoplasm with Haversian system. Spongy osteoma has spongiotic trabecular bone with marrow and it is known as osteoid osteoma (2,4). Mixed osteoma is a mixture of compact and spongiotic osteomas. Clinically, it is not possible to differentiate the type of osteoma due to parallel symptoms and objective signs (5).

Differential diagnoses of mastoid osteoma include exostosis, osteoblastoma, osteochondroma, Paget's disease, isolated eosinophilic granuloma, giant cell tumour and malignant lesions such as osteosarcoma and osteoblastic metastasis (2,4). Radiologic borders of these lesions are less demarcated than those of osteomas and are generally distinguished by imaging and histopathological study. Heterogenous, poorly delineated lesions with rapid growth usually suggest malignancy. Exostosis and osteoma are very similar in most aspects although exostosis lacks fibrovascular canals. Osteomas are bony neoplasms that are usually single, unilateral and pedunculated and mostly

arise lateral to tympanomastoid or tympanosquamous suture lines. Exostosis are multiple, bilateral, broad-based tumours which are found medial to temporal bone sutures.

Surgical resection is the treatment of choice for mastoid osteoma (2,3). The surgery should include careful removal of periosteal cover and safe margin of mastoid cortex around it. When the lesion is small and asymptomatic, excision is not mandatory, but the patient requires continuous follow up with regular imaging (4). Various studies have shown that recurrence is less if a complete excision has been achieved (4,5). Complications from mastoid osteoma surgery are rare. If the mastoid osteoma extends into the facial nerve canal or bony labyrinth, a complete excision is not indicated in order to prevent damages to these structures (4). In the case of our patient, the surgery and post-operative period were uneventful. In particular, the patient was symptom free and achieved good cosmetic outcome with no evidence of recurrence during the one-year follow up period.

Mastoid osteoma is a slow growing and relatively rare benign bony neoplasm. CT scan is the investigation of choice. Surgery is indicated for cosmetic reasons and confirmation of diagnosis. With complete excision, recurrence is rare and the prognosis of mastoid osteoma is considered to be good in cosmetic and curative aspects.

REFERENCES

1. Umesh CP, Sachin K, Nidhi S, Samarjit B .Mastoid osteoma. Indian Journal of Otology 2014; 20(3):132-133.

2. Carlos UP, Ricardo WF de C, Annie MG de A, Rafaela ND. Mastoid osteoma. Consideration on two cases and literature review. Intl Arch Otorhinolaryngol 2009; 13(3):350–353.

3. Mohammad SA, Mohammad A, Arash D. Osteoid osteoma presenting as a painful solitary skull lesion: a case report. Iranian Journal of Otorhinolaryngology 2014; 26(2)115-117.

4. Sung JP, Young HK.A case of giant osteoma developed from the mastoid cortical bone .Korean J Audiol 2012;16(2):95-98.

5. Kartik P, Vandana T, Mohan J, Rajesh K, Madhavi P, Rajanala N,Reshma H et al .Osteoma of temporal bone –a rare case report .International Journal of Otolaryngology and Head & Neck Surgery 2014;3:252-258.