

Postaural osteoma: A rare case report

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Abstract

Osteomas are benign slow-growing tumour predominantly occurring in long bones, rarely found in the skull. In the skull they are found most commonly in fronto-ethmoid region, they are very rarely found in the temporal bone and over the mastoid region. They very rarely extend into sigmoid sinus. They are usually asymptomatic and treated mainly for cosmetic purposes. In this rare case report, we are presenting a case of recurrent osteoma in mastoid region with sigmoid sinus extension causing cosmetic deformity and treatment of this lesion. As osteoma of the mastoid bone that too with sigmoid sinus extension is very rare lesion in otology practice, we believe that this report will be of interest to otolaryngologists when dealing with temporal bone osteomas.

Key Word: osteoma, temporal bone.

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INTRODUCTION

Osteomas are benign bone neoplasms; in the head and neck region. They are usually found in the frontoethmoid area. Temporal bone osteoma is a rare entity. Those located in the mastoid and squamous parts of temporal bone may cause cosmetic deformity such as mastoid mass or an auricular protrusion. In differential diagnosis; other neoplasms of mastoid region including osteosarcoma and osteoblastic metastasis should be considered. In this rare case report, we presented a mastoid osteoma having sigmoid sinus extension causing cosmetic deformity and shortly discussed the differential diagnosis and treatment of this lesion.

CASE REPORT

A twenty-one year-old female patient came to the OPD with a mass behind her right ear for a duration of 8 years (figure 1). Mass was insidious in onset, gradually

progressive & recurrent in nature. There were no accompanying symptoms like earache, ear discharge, hearing loss, vertigo or tinnitus. She was being operated for the same 10 yrs back. Examination revealed approximately 6 x 4 cm mass on the right mastoid region which was oval in shape, hard and painless. There was scar mark of previous surgery on overlying skin. Bilateral tympanic membranes were intact and normal. X-ray skull (figure 2) and Temporal CT scan (figure 3) showed a postauricular, well demarcated, dense, sclerotic mass of 3.9 x 1.5 cm on the posterolateral part of the right mastoid bone extending upto right sigmoid sinus. It was noted that the middle and inner ear were normal, and the facial nerve was not involved. She underwent surgery. It was actually teamwork approach with neurosurgeon. A postauricular skin incision and periosteal elevation were performed. The mass was exposed under the periosteum and removed entirely by using chisel & drilling. Sigmoid sinus wall was found adherent to the mass. (Figure 4) The defect was closed by fibrin glue & gelfoam. Post operative period was uneventful. Post operative MRI brain + venography (P+C) done after 8 days s/o normal transverse sinus & sigmoid sinus flow with subacute thrombosis of rt jugular bulb. (Figure 6) The specimen was sent for histopathological examination, which was consistent with osteoma. In the histologic examination, varying degrees of osteoblastic and osteoclastic activities were noted with no hematopoietic cells. It showed lamellar bone with fibrovascular bundles. (figure 5)



Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

Figure 6

DISCUSSION

Head & neck osteomas are rare. According to Dominiguez Perez only 150 cases have been reported in literature in 2010.²³ Osteomas located in all portions of the temporal bone, including external auditory canal (the most common site), squama, mastoid, middle ear, glenoid fossa, eustachian tube, internal auditory canal, petrous apex and styloid process have been reported.²⁻⁵ Mastoid portion is the second most common area for the existence of temporal bone osteomas, following the external auditory canal.² Trauma, surgery, radiotherapy, chronic infection and pituitary dysfunction are all included in the etiology of mastoid osteomas, however, the precise etiology is still unknown and considered to be a true bone tumor.⁸⁻¹¹ According to Haymann, it was due to an alteration in the growth of the cranial bones.¹⁹ Freidberg suggested it occurred as a result of trauma followed by periostitis.²⁰ Middle ear osteoma was diagnosed in two brothers which might indicate genetic etiology.¹² Furthermore, it was reported that temporal bone osteomas occur twice as often in females, whereas external auditory canal osteomas occur twice as often in males.¹³ At the time of presentation, the size of osteomas is generally not bigger than 3 cm^{2,14}, since osteomas grow slowly and remain stable for many years. The osteomas located in the mastoid and squamous portion of temporal bone, can produce cosmetic deformities such as external mass and auricular protrusion. Superficial osteomas have smooth surface, are bone hard and the overlying skin is not involved.² Clinically, mastoid osteomas are asymptomatic and rarely cause pain or inflammation. Pressure-induced pain can be referred to the neck, temporomandibular joint or middle ear. In the presence of external ear canal obstruction, conductive hearing loss and chronic suppuration may occur.^{15,16} A mastoid osteoma compressing the posterior fossa structures and causing intracranial complications has been reported by Van Dellen.¹⁷ In differential diagnosis of mastoid osteomas, osteosarcoma; osteoblastic metastasis; isolated eosinophilic granuloma; Paget's disease; giant cell tumor; osteoid osteoma; calcified meningioma and monostotic fibrous dysplasia should be considered. Radiologic borders of these lesions are less clear than those of osteomas.³ CT scanning demonstrates an osteoma as well

demarcated, dense, sclerotic outgrowth from the mastoid bone. Surgery is indicated for both cosmetic reasons and confirmation of the diagnosis of osteomas of the mastoid and squamous portion of the temporal bone. The osteoma must completely be excised until normal mastoid air cells are exposed. In mastoid osteomas extending into the bony labyrinth and facial nerve, removal might not be indicated since the damage to these structures is likely. Recurrence is rare.^{2,15} Gardner's syndrome must be kept in mind in cases of multiple osteomas. Three types of mastoid osteomas have been described, based on structural characteristics.^{19,21,22}

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 be pedunculated and grow relatively faster.

Mixed: Mixture of spongy and compact types.

CONCLUSION

Mastoid osteoma is a rare, slowly growing, benign tumour. Computed tomograph confirms the diagnosis, eliminates the main differential diagnoses and guides management by visualising tumour extension. Treatment is surgical and must be considered case by case according to the cosmetic deformity and the symptoms.

REFERENCES

1. Unal OF, Tosun F, Yetiser S, Dundar A. Osteoma of the middle ear. *Int J Pediatr Otorhinolaryngol* 2000; 52:193-5.
2. Denia A, Perez F, Canalis RR, *et al.* Extracanalicular osteomas of the temporal bone. *Arch Otolaryngol* 1979; 105:706-9.
3. Estrem SA, Vessely MB, Oro JJ. Osteoma of the internal auditory canal. *Otolaryngol Head Neck Surg* 1993; 108: 293-7.

4. Burton DM, Gonzalez C. Mastoid Osteomas. *Ear Nose Throat J* 1991; 70:161-2.
5. Yamasoba T, Harada T, Okuno T, *et al.*. Osteoma of the middle ear. Report of a case. *Arch Otolaryngol Head Neck Surg* 1990; 116:1214-6.
6. D'Ottovai LR, Piccirillo E, De Sanctis S, *et al.*. Mastoid osteomas: review of the literature and presentation of two clinical cases. *Acta Otorinolaringol Ital* 1997; 17:136-9.
7. Gungor A, Cincik H, Poyrazoglu E, Saglam O, Candan H. Mastoid osteomas: report of two cases. *Otol Neurotol* 2004; 25:95-7.
8. Fenton JE, Turner J, Fagan PA. A histopathologic review of temporal bone exostoses and osteomata. *Laryngoscope* 1996; 106:624-8.
9. Graham MD. Osteomas and exostoses of the external auditory canal. *Ann Otol* 1979; 88:566-72.
10. Tran LP, Grungfast KM, Selesnick SH. Benign lesions of the external auditory canal. *Otolaryngol Clin North Am* 1996; 29:807-25.
11. Fisher EW, McManus TC. Surgery of the external auditory canal exostoses and osteomata. *J Laryngol Otol* 1994; 108:106-10.
12. Thomas R. Familial osteoma of the middle ear. *J Laryngol Otol* 1964; 78:805-7.
13. Ohhashi M, Terayama Y, Mitsui H. Osteoma of the temporal bone; a case report. *Nippon Jibiinkoka Gakkai Kaiho* 1984; 87:590-5.
14. Guerin N, Chauveau E, Julien M, *et al.*. Osteoma of the mastoid bone: report of two cases. *Laryngol Otol Rhinol* 1996; 117:127-32.
15. Probst LE, Shankar L, Fox R. Osteoma of the mastoid bone. *J Otolaryngol* 1991; 20:228-30.
16. Singh I, Sanasam JC, Bhatia PL, *et al.*. Giant osteoma of the mastoid. *Ear Nose Throat J* 1979; 58:243-5.
17. Van Dellen JR. A mastoid osteoma causing intracranial complications: a case report. *S Afr Med J* 1977; 51:597-8.
18. Birrell JF. Osteoma of the mastoid. *J R Coll Surg Edinb* 1978;23:305-9.224
19. Varshney S. Osteoma of temporal bone. *Indian J of Otol* 2001;7:91-2.
20. Friedberg SA. Osteoma of mastoid process. *Arch Otolaryngol* 1938;28:20-6.
21. Probst LE, Shanken L, Fox R. Osteoma of the mastoid bone. *J Otolaryngol* 1991;20:228-30.
22. Singh I, Sanasam JC, Bhatia PL, Singh LS. Giant osteoma of the mastoid. *Ear Nose Throat J* 1979;58.
23. Dominguez Pérez AD, Rodríguez Romero R, Domínguez Durán E, Riquelme Montaña P, Alcántara Bernal R, Monreal Rodríguez C. El osteoma en la mastoides, ¿un hallazgo incidental? *Acta Otorrinolaringol Esp* 2011;62:140-3

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