CASE REPORT

Osteoma of the Mastoid Bone

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Osteomas of all portions of the temporal bone have been reported. However, when we searched for 'mastoid osteomas' in 'pubmed', we noted that only two cases were reported during last ten years. In this case report, we wanted to revisit this rare entity by presenting a mastoid osteoma causing cosmetic deformity and by discussing the differential diagnosis and treatment of this lesion. As osteomas of the mastoid bone are not frequent lesions in otology practice, we believe that this report will be of interest to otolaryngologists when dealing with temporal bone osteomas.

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 [1]. Those located in the mastoid and squamous parts of temporal bone may cause cosmetic deformity such as mastoid mass or an auricular protrusion [2]. In differential diagnosis; other neoplasms of mastoid region including osteosarcoma and osteoblastic metastasis should be considered [3].

In this case report, we presented a mastoid osteoma causing cosmetic deformity and shortly discussed the differential diagnosis and treatment of this lesion.

CASE REPORT

Twenty-six year-old male patient applied to the outpatient clinic with a progressively enlarging mass, behind his right ear, for a duration of 1 year. There was no accompanying symptoms of earache, ear discharge, hearing loss, vertigo or tinnitus in his medical history. Otolaryngologic examination revealed a postauricular 1.5 x 1 cm mass on the right mastoid region which was hard and painless; there was no enduration or erythema on the overlying skin. The patient denied previous facial nerve paralysis. Bilateral external ear canal was full of wax; after the wax was cleaned, it was seen that bilateral tympanic membranes were intact and normal. On audiogram; bilateral hearing level was normal. Temporal CT scan indicated a postauricular, well demarcated, dense, sclerotic mass of 1.3 x 1 cm on the posterolateral part of the right mastoid bone (Figure 1). It was noted that the middle and inner ear were normal, and the facial nerve was not involved.

The patient was a HCV porter and was followed up for essential hypertension for 1 year.

He underwent diagnostic surgery. A postauricular skin incision and periosteal elevation were performed. The mass was exposed under the periosteum and removed entirely by using a chisel. The base of the lesion was drilled until normal mastoid air cell was identified. Post operative period was uneventful and post operative CT scan and audiological findings were normal. (Figure 2) The specimens were sent for histopathological examination, which were consistent with osteoma. In the histologic examination, varying degrees of osteoblastic and osteoclastic activities were noted with no hematopoietic cells. (Figure 3)

Figure-1: Axial section CT scan showing osteoma of the right mastoid bone.

Figure-2: Axial section CT scan of the temporal bone at postoperative sixth month.

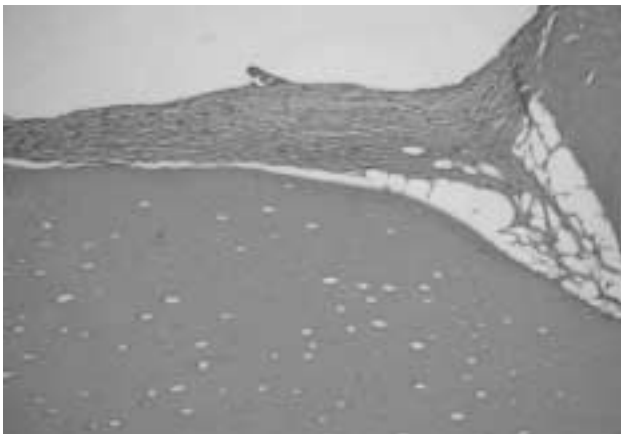

Figure-3: Photograph of peripheral part of compact osteoma. The bone is lamellar and cortical type with fibrovasculer tissue (Hematoxylin-eosin stain, original magnification x40).

DISCUSSION

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]. When we searched for 'mastoid osteomas' in 'pubmed', we noted that, D'Ottovai et al. [6], in 1997, reviewed the world literature and found 100 reported mastoid osteoma cases and added two more cases to the literature. More recently, Gungor et al. [7] reported two more mastoid osteoma cases in 2004. Our case is the one that is being reported for last 4 years.

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]. 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]. The etiologic reason was not determined in our case and our patient was a male.

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]. The presented lesion caused cosmetic deformity as a result of gradual growth to the size of approximately 1.5 cm over 1 year.

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. If complete removal can be

accomplished, recurrence is rare [2,15]. Complications of surgery including facial nerve damage, tearing of the sigmoid sinus, and postoperative auricular discharge, have been reported [15]. Moreover, Birrell [18] reported two cases of recurrence.

As osteomas of the mastoid bone are not frequent lesions in otology practice, we believe that this report will be of interest to otolaryngologists when dealing with temporal bone osteomas.

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.