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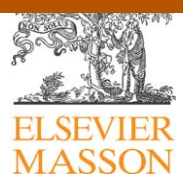

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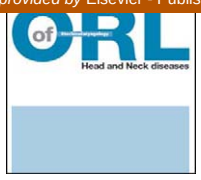

CASE REPORT

Mastoid osteoma: Report of two cases

M. El Fakiri, W. El Bakkouri, C. Halimi, A. Aït Mansour, D. Ayache*

Service d'ORL et de chirurgie cervicofaciale, fondation Adolphe-de-Rothschild, 25, rue Manin, 75019 Paris, France

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KEYWORDS
Osteoma;
Mastoid;
Temporal bone;
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Summary
Introduction: Mastoid osteoma is a rare benign tumour. In this article, the authors report two new cases of mastoid osteoma and discuss the modalities of diagnosis and management.
Case reports: Both patients presented with a retroauricular mass that had been slowly increasing in size over several years. The patients consulted for the cosmetic deformity induced by the lesion or moderate tenderness. The diagnosis was based on the clinical presentation and non-contrast CT. The osteoma was surgically resected in one patient.
Discussion/Conclusion: Mastoid osteoma is a rare, slowly growing, and usually asymptomatic benign tumour. Diagnosis is based on clinical findings and CT. Surgery is indicated for symptomatic or cosmetically unacceptable osteomas.

Introduction

Mastoid osteomas are rare, benign bone tumours [1]. They are usually asymptomatic with a chronic course, and present as a hard, painless, retroauricular mass. The diagnosis is based on clinical examination and imaging, and surgical management is usually justified by cosmetic reasons. Based on a review of the main articles of the literature and analysis of two cases managed in our department, we will describe the pathophysiology, clinical presentation and management of mastoid osteomas.

Case reports

Case 1

Mrs C., a previously healthy 59-year-old woman, was referred to the ENT clinic for assessment of a left retroauricular mass that had been slowly increasing in size for 8 to 9 years. This patient was initially asymptomatic, but reported an increasingly tender mass over the previous year, as well as the unsightly appearance of this mass. Clinical examination revealed a left retroauricular mass with bony consistency, 3 cm in diameter, fixed to the mastoid. Otoscopic examination and audiometry were normal. 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. 1). Surgical resection was performed under general anaesthesia via a retroauricular incision. Following skin dissection and exposure of the bone tumour, the tumour was completely and simply resected by using a bone chisel.

* Corresponding author. Tel.: +01 48 03 68 40; fax: +01 48 03 65 17.
E-mail address: dayache@fo-rothschild.fr (D. Ayache).

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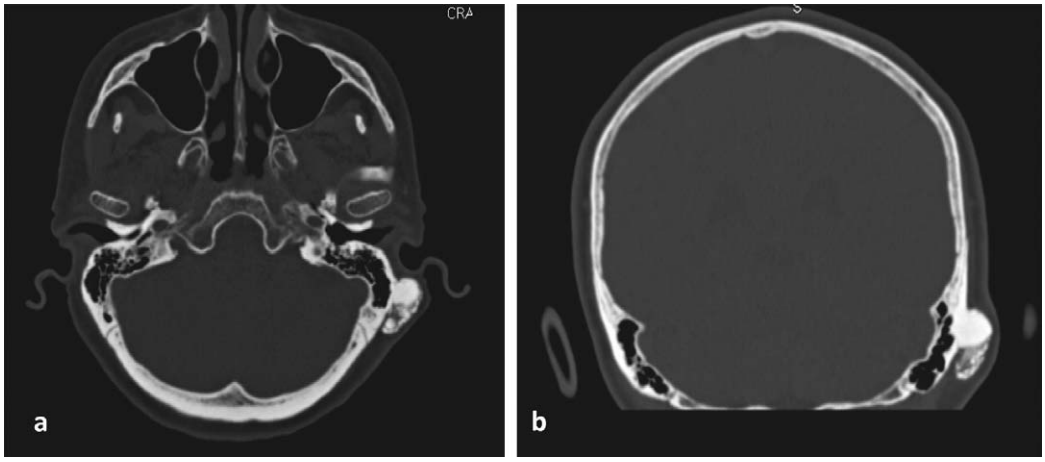

Figure 1 Non-contrast CT: axial (a) and coronal (b) sections showing the osteoma arising from the posterosuperior part of the left mastoid cortex.

Histological examination confirmed the diagnosis of compact osteoma. The postoperative course was uneventful. No local recurrence was observed at the last follow-up visit, one year after the operation.

Case 2

Mrs S., 37-year-old, a flight attendant, with no notable medical or surgical history, was referred to our department with an acquired left retroauricular mass, slowly increasing in size over the last 10 years. This previously asymptomatic mass had never worried the patient and had never been previously assessed. Mrs S. consulted following the recent prescription of glasses, as the mass interfered with fitting of the glasses and caused pain on prolonged contact with the arms of the glasses. Clinical examination revealed a retroauricular mass with bony consistency and a long axis of 4—5 cm, fixed to the mastoid and covered by normal skin mobile in relation to the mass. Audiometry was normal and CT of the petrous temporal bones showed an isolated bone lesion of the left mastoid cortex, typical of mastoid osteoma (Fig. 2). Surgery was scheduled, but subsequently cancelled due to pregnancy.

Discussion

Head and neck osteomas are rare tumours [1], usually described in the ethmoidal and frontal regions. In the temporal region, osteomas are essentially reported in the external auditory canal, or 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]. According to Dominguez Pérez et al. [1], about 150 cases have been reported in the literature in 2010.

As illustrated by the two cases reported here, osteomas arising from outer cortex of the mastoid are associated with minimal or no symptoms. They are essentially responsible for unsightly deformity of the retroauricular region, or even detachment of the external ear in the case of a very large, anterior tumour. Mastoid osteomas can cause local tenderness and interfere with wearing glasses. The presence of multiple osteomas should raise the suspicion of Gardner's syndrome, requiring colonoscopy looking for colorectal polyps [4]. Gardner's syndrome is an autosomal dominant hereditary disease comprising colorectal polyposis with a risk of malignant degeneration, and extra-gastrointestinal lesions (multiple skeletal osteomas, subcutaneous fibromas and lipomas, desmoid tumours, epidermal cysts, etc.). Although osteomas secondary to trauma, surgery, irradiation or chronic infection have been described, the aetiopathogenesis and pathophysiology of mastoid osteoma usually remain unknown.

Non-contrast computed tomography of the petrous temporal bones is the examination of choice for diagnosis and staging. 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. In rare cases, the osteoma can extend medially into the petrous temporal bone adjacent to the facial nerve, lateral semicircular canal or ossicles. In these cases, imaging can define the anatomical relations with these structures before considering surgical resection [1,2,5—7]. 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 [1,5,6,8]. Signs suggestive of a malignant lesion are rapid growth, pain and a poorly delimited, heterogeneous, osteolytic appearance on CT.

Histologically, three varieties of osteoma are classically described: compact, cancellous and mixed [8]. As in the case reported here, the compact form, composed of dense bone, with a pedunculated or sessile implantation, is the most frequent form, while cancellous osteomas are rare [8].

When indicated, treatment is based on surgery with resection of the lesion and its implantation base [4,5]. The surgical indication must take into account the benign and slowly progressive nature of this tumour and is usually justified by the unsightly appearance of the lesion or the

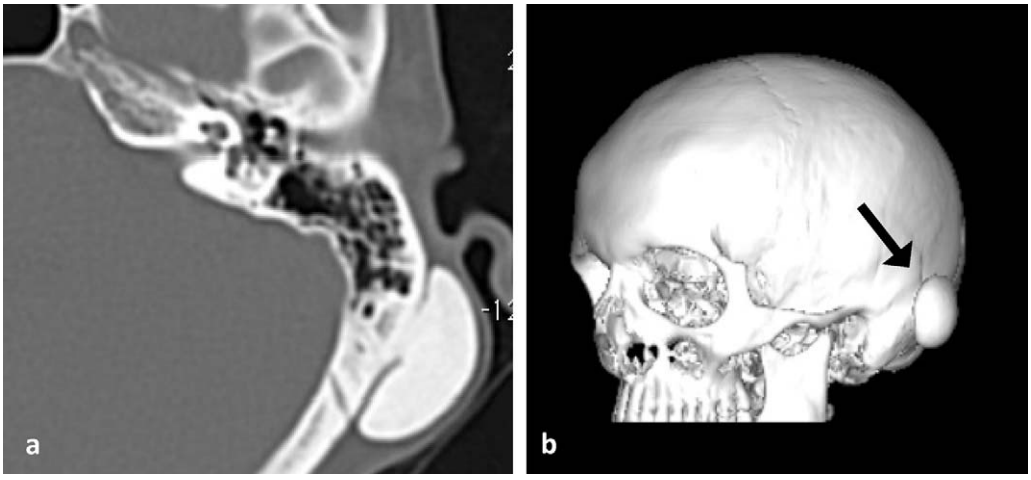

Figure 2 Non-contrast CT: axial (a) and 3D reconstruction (b) showing a pedunculated, superficial left mastoid osteoma.

associated symptoms (tenderness). Surgical resection usually raises few technical problems: retroauricular incision adapted to the size of the lesion, exposure of the osteoma, then resection with a bone chisel or curette or by reaming, depending on the size of the osteoma and its sessile or pedunculated implantation. A retroauricular subcutaneous depression may be observed after the operation [9].

Conclusion

Mastoid osteoma is a rare, slowly growing, benign tumour. Computed tomography of petrous temporal bones 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 associated symptoms.

Disclosure of interest

The authors declare that they have no conflicts of interest concerning this article.

References

[1] Dominguez Pérez AD, Rodríguez Romero R, Domínguez Durán E, Riquelme Montaño P, Alcántara Bernal R, Monreal Rodríguez C. El osteoma en la mastoides, ¿un hallazgo incidental? Acta Otorrinolaringol Esp 2011;62:140—3.
[2] Kim CW, Oh SJ, Kang JM, Ahn HY. Multiple osteomas in the middle ear. Eur Arch Otorhinolaryngol 2006;263:1151—4.
[3] 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.
[4] Woldenberg Y, Nash M, Bodner L. Peripheral osteoma of the maxillofacial region. Diagnosis and management: a study of 14 cases. Oral Surg 2005;10:E139—42.
[5] Quesnel AM, Lee DJ. Extensive osteomas of the temporal parietal occipital skull. Otol Neurotol 2011;32:e3—4.
[6] Ben-Yaakov A, Wohlgelernter J, Gross M. Osteoma of the lateral semicircular canal. Acta Otolaryngol 2006;126:1005—7.
[7] Gungor A, Cincik H, Poyazoglu E, et al. Mastoid osteomas: report of two cases. Otol Neurotol 2004;25:95—7.
[8] Guerin N, Chauveau E, Julien M, Dumont JM, Merignargues G. Osteoma of the mastoid bone: report of two cases. Rev Laryngol Otol Rhinol (Bord) 1996;117:127—32.
[9] Probst LE, Shankar L, Fox R. Osteoma the mastoid bone. J Otolaryngol 1991;20:228—30.