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Osteoma Originating from Mastoid Cortex

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Case Report

Abstract

Mastoid osteomas are very rare and defined as benign masses growing gradually in size. Temporal bone computed tomography is the examination of choice for their diagnosis and differentiation. Surgical resection is used to treat mastoid osteomas causing cosmetic deformity. Prognosis is good in cosmetic and curative aspects, and recurrences are very rare. No case of malign transformation has been reported. In this study, an adult patient who was treated because of a mastoid osteoma is presented with review of the current literature.

Keywords: Osteoma, mastoid, temporal bone, computed tomography

Introduction

Temporal bone osteomas are rare mesenchymal osteoblastic tumors (1). They are most frequently seen in the external auditory canal, and osteomas originating from mastoid cortex are very rare (2). Mastoid osteomas are generally asymptomatic, and they cause cosmetic deformities because of swelling in the postauricular region and pushing the auricule forward (3). In this case report, the current diagnosis and treatment method of rarely seen mastoid bone osteomas are discussed.

Case Presentation

A 47-year-old female patient with a swelling gradually increasing at the back of the left ear for 5 years, which had cosmetically disturbed her, was admitted to our clinic with the complaint of painful swelling from time to time. She had no history of trauma, radiotherapy, and chronic infection. Patient's physical examination revealed a 2×2 cm firm mass that was not fixed to the skin in the left postauricular region; she had normal ear-nose-throat examination findings (Figure 1). A radiopaque and broad based lesion limited to the mastoid cortex and consistent with a 2×2 cm osteoma was detected on temporal bone computed tomography (CT); the patient had normal audiological test results (Figure 2a,b). No radiological anomaly was detected in the middle and inner ears.

The mass was accessed by removing the mastoid periosteal flap with the retroauricular approach with the patient under general anesthesia. The osteoma was excised with the help of a gouge and hammer, and the base was flattened by drilling until the unaffected cortical tissue was reached; this was done to prevent recurrence (Figure 3). The diagnosis of a compact osteoma was confirmed on histopathological examination. No recurrence was detected in the six-month follow-up of the patient who did not develop any postoperative complication.

Discussion

Temporal bone osteomas are rarely seen, slowly growing, benign, mesenchymal, osteoblastic tumors (1, 4). Mastoid osteomas were first reported in the literature by Politzer in 1887, and D'Ottavi et al. (5) reviewed almost 100 previously reported mastoid osteoma cases and reported two more cases. Osteomas can be seen in the squama of the temporal bone, mastoid, middle ear, glenoid fossa, Eustachian tube, styloid process, and internal and external auditory canal (4, 6). Its most frequently seen location is the external auditory canal, and os-

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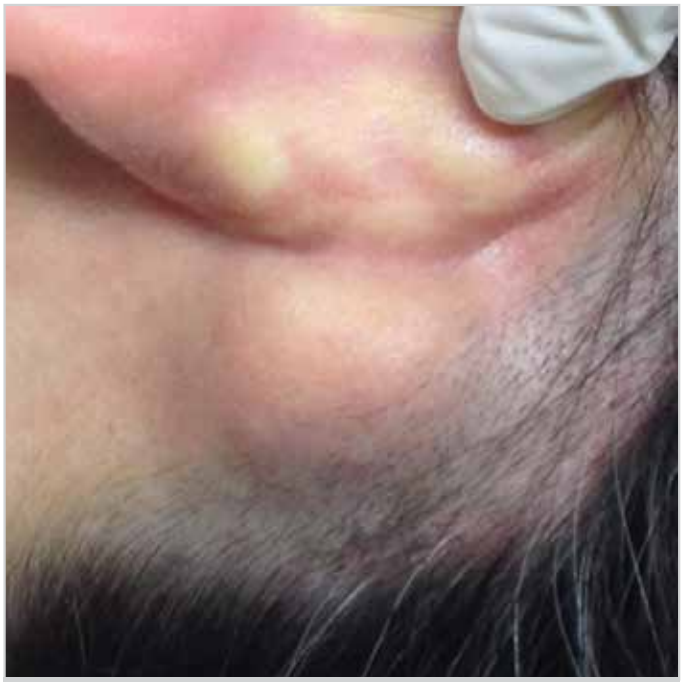

Figure 1. A 2×2 cm firm and fixed mass in the left postauricular region

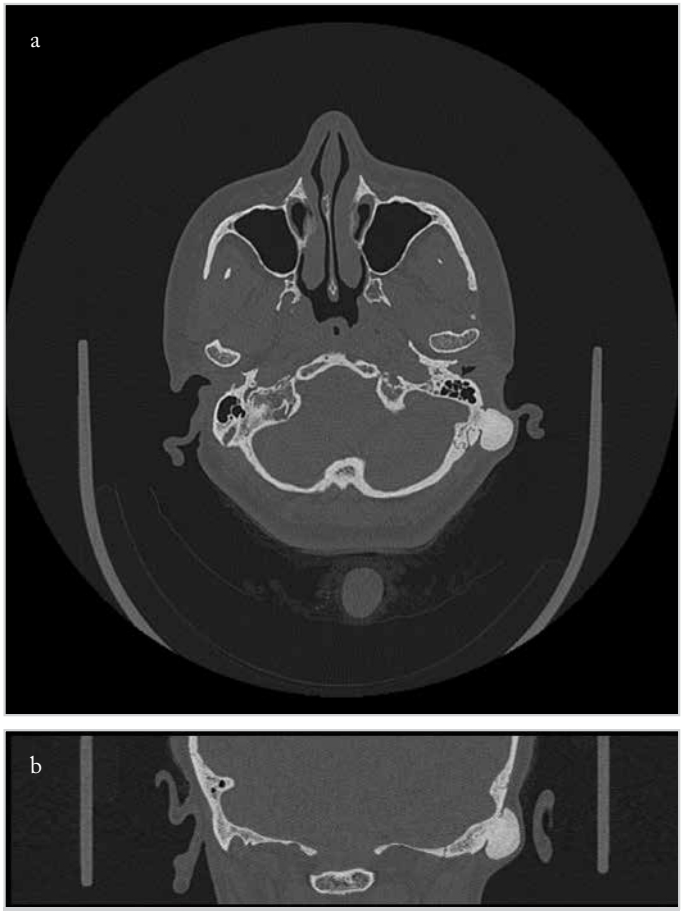

Figure 2. (a) Temporal bone CT (axial section); (b) temporal bone CT (coronal section)

teomas originating from the mastoid cortex as observed in our case are very rare (5). It is considered that osteomas originate from pre-osseous connective tissue and develop secondary to irritants (4). In their etiology, trauma, previous surgical interventions, radiotherapy, chronic infections, and hormonal disorders related to dysfunction of the pituitary gland have been reported (7). However, these etiological factors were not found in the history of our case. Osteomas are generally seen alone. A solitary mastoid osteoma was found in our patient. In the presence of multiple osteomas, Gardner syndrome, which is an autosomal dominant hereditary disease having a course with lipomas, colorectal polyps with malignant degeneration risks, multiple osteomas, and subcutaneous fibromas should be considered. In case of suspicion, colonoscopy should be performed (7).

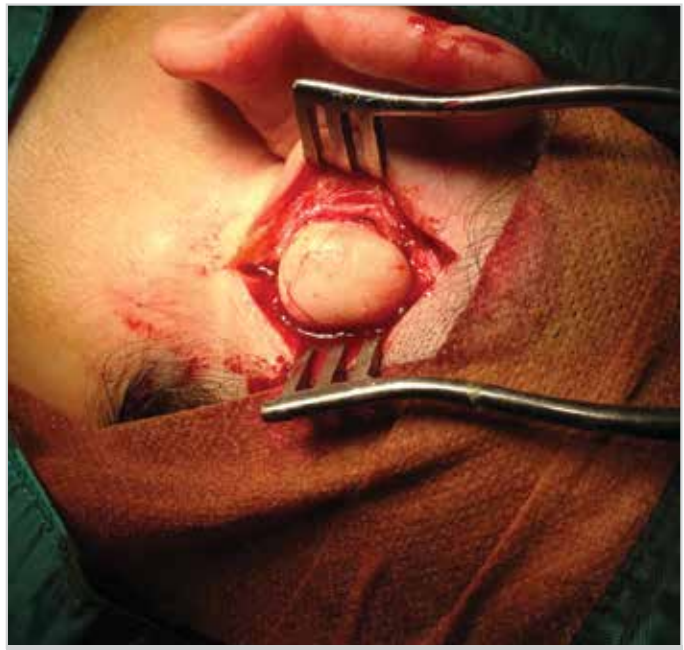

Figure 3. Intraoperative view of the mastoid osteoma that is accessed with the retroauricular approach

Mastoid osteomas are generally asymptomatic, and as seen in our case, they cause cosmetic deformities as a result of swelling in the postauricular region and pushing the auricle forward; however, fullness, pressure-related pain, meatal obstruction-induced conductive hearing loss, and chronic discharge have also been reported (3). Their diagnosis is established through clinical and temporal bone CT (1). In temporal bone CT, a well-circumscribed, pedicled or sessile, and round bone lesion is seen in the cortex. An intrapetrosal extension is not seen in superficial osteomas, and mastoid aeration is normal. Osteomas rarely extend medially to the petrous bone or lateral semicircular canal or ossicles (4). Temporal bone CT is very useful while planning surgical procedures in such cases. In our case, there was a radiopaque and broad based lesion limited to the mastoid cortex that was consistent with a 2×2 cm osteoma. Other benign lesions including osteoid osteomas, osteoblastomas, ossifying fibromas, fibrous dysplasia, chondromas, osteochondromas, Paget's disease, and giant cell tumors should be kept in mind in the differential diagnosis. Moreover, malignant lesions such as osteosarcomas and osteoblastic metastases should be considered (4, 7, 8). Rapid growth, pain, irregular borders, heterogeneous structures, and an osteolytic appearance on performing temporal bone CT indicate malignancy.

Osteomas are histologically classified into three groups: compact, spongiotic, and mixed types. Compact osteomas are the most common type, and they consist of sessile or pedicled dense bone tissue. In contrast, spongiotic osteomas are rare (7). In the histopathological examination in our case, a compact osteoma was detected.

Surgical excision is indicated for symptomatic osteomas or osteomas causing cosmetic deformities. For preventing recurrence, the mastoid cortex must be drilled until the unaffected cortical tissue is reached after the total excision of the tumor. With mastoid air cell involvement, cortical mastoidectomy should be performed (8, 9). In our case, the osteoma was excised under general anesthesia with the retroauricular approach with a gouge and hammer and the base was drilled until the unaffected cortical tissue was reached for preventing recurrence.

The prognosis of mastoid osteomas is very good, and recurrence is rarely seen. In the literature, two cases of recurrence after treatment were reported, but no malignant transformation was found (10).

Conclusion

In the presence of a firm mass in the mastoid region, mastoid osteomas, which are rarely seen and slowly growing benign tumors, should be kept in mind. Temporal bone CT is the safest technique in their diagnosis. These tumors that lead to cosmetic deformity are treated surgically.

Informed Consent: Written informed consent was obtained from patient who participated in this study.

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