Osteoma of the Mastoid Cortex
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INTRODUCTION

Head and neck osteomas are benign bone neoplasms usually found in the frontal and ethmoid sinuses. Temporal bone osteomas, however, are rare entities that can present in any portion of the temporal bone including the internal and external auditory canals, middle ear, Eustachian tube, petrous apex, styloid process, glenoid fossa, squamosa and mastoid. Extracanalicular osteomas are most commonly located in the mastoid portion.

Mastoid osteomas originate from pre-osseous connective tissue and can be caused by trauma, surgery, radiotherapy, chronic infection or pituitary dysfunction. They grow slowly or remain stable for many years; rarely they can cause inflammation or pressure-induced pain that may be referred to the neck, auricle or middle ear.

CASE REPORT

A 50-year-old woman presented with a 20-year history of a progressively enlarging, firm mass over the right mastoid process and a small mass at the inferior border of the right mandible. There was no associated history of hearing loss, tinnitus, vertigo, auricular discharge, trauma or facial paralysis. Physical examination revealed a fixed, non-tender 3-cm diameter bony mass arising from the mastoid process. The skin temperature and color, otoscopic examination and a complete audiometric battery were all normal.

Coronal and axial CT scans revealed a large, smooth, bony mass arising from the mastoid cortex. Additionally seen was a small bony protuberance arising from the outer cortex of the mandible, although this was somewhat obscured by dental artifact. Both of these lesions were radiographically compatible with a diagnosis of osteoma. The middle and inner ear and facial nerve were normal. The patient underwent an upper gastrointestinal series with small bowel follow-through and a colonoscopy; both were negative for intestinal polyposis, thus ruling out Gardner’s syndrome.

The patient was taken to the operating room for excision of the mastoid lesion. A standard postauricular incision was made and the periosteum was elevated off the mastoid process. The mastoid lesion was identified as a spherical bony mass approximately 3 by 2.5 cm with a narrow base attached to the underlying skull. The base of the osteoma was drilled until normal mastoid air cells were seen and the mass was freed from the surrounding bone; the resection was completed by using a chisel to separate the remaining attachment. Pathologic examination confirmed it to be an osteoma. The patient’s postoperative course was uneventful.

DISCUSSION

Mastoid osteoma is a rare, benign bone neoplasm that may cause cosmetic deformity and auricular protrusion. Coronal and axial computed tomography (CT) classically demonstrate a well-demarcated outgrowth from the mastoid bone. If the radiologic borders are unclear the differential diagnosis should include osteosarcoma, osteoblastic metastasis, eosinophilic granuloma, Paget’s disease, giant cell tumor, osteoid osteoma, calcified meningioma and monostotic fibrous dysplasia.

The recurrence rate after surgical excision is low if the osteoma is excised completely, leaving only normal mastoid air cells exposed. If the tumor is in close proximity to the facial nerve or the bony labyrinth, the risks of surgery often outweigh the benefits. Other risks of surgery include damage to the sigmoid sinus and postoperative wound infection.

In patients with paranasal sinus and temporal bone osteomas, otolaryngologists should consider the possibility of Gardner’s syndrome—one of the adenomatous polyposis syndromes. Along with familial adenomatous polyposis and Turcot’s syndrome, it is characterized by the presence of numerous adenomatous polyps throughout the large intestine. Inheritance is in an autosomal dominant manner. Among the extracolonic manifestations of Gardner’s syndrome are osteomas of the skull, mandible, and long bones; desmoid tumors; dental abnormalities; epidermoid and sebaceous cysts; lipomas; fibromas; neoplasms of the thyroid, adrenals, biliary tree, and liver; congenital hypertrophy of the retinal pigment epithelium; and upper gastrointestinal polyps. In affected individuals, the risk of developing colon cancer approaches 100%, so suspected patients should have a complete workup including lower gastrointestinal tract endoscopy and, in some cases, DNA testing. Other neoplasms of the mastoid region should also be considered, including osteosarcoma and osteoblastic metastasis.

REFERENCES