Osteoma of the Mastoid Bone – A Case Report

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Introduction

Osteomas are benign tumours of the lamellar bones. In routine ENT practice they are commonly seen as dense radio opaque shadows arising from within the paranasal sinuses. Osteoma of the temporal bone occurs infrequently, and when they occur, are seen most common in the external ear canal. Osteoma originating from the middle ear is very rare. That from the mastoid are rarer. We document such a rare presentation of osteoma arising from the mastoid.

Case Report

A 16 year-old girl, otherwise otolaryngologically asymptomatic, presented with a swelling behind the right ear that had been growing in size very slowly for the past 5 to 6 years, which had now become unsightly. She did not complain of local pain, earache, headache, deafness, giddiness or any other systemic symptoms. She did not give any history of trauma. On examination, she was found to have a 2 cm X 2 cm egg shaped hard bony swelling above and behind the right mastoid process fixed to the underlying bone. It was non tender and appeared to be pedunculated. Detailed ENT examination including facial nerve function was normal. There were no bony exostoses in the external ear canal. Clinical diagnosis of osteoma was obvious even though rare, which was confirmed by plain X-ray of the mastoids. CT scan was done to exclude the presence of any other osteoma within the temporal bones, the skull and sinuses. It showed a pedunculated dense osteoma arising from outer cortex of the right mastoid close to the lambdoid suture (Fig 1). There was a definite plane of spongy bone at the base of the osteoma. There were no other osteomas elsewhere in the skull. She was taken up for excision of the osteoma under general anaesthesia. A modified post aural incision was given sufficiently behind the groove to expose the tumor completely. After sequential dissection the osteoma was freed of all muscle attachments. A Stryker saw was used to cut through the periphery of the tumor. There after a Chisel was used to free the tumor from the mastoid. This was possible because a plane of spongy bone was found underneath the cortex. Finally the edges of the bone were polished with a round burr

and the incision closed in layers. She had an uneventful postoperative period. Histopathology confirmed an osteoid osteoma. She has been regularly followed for 2 years without any signs of regrowth.

Discussion

Excluding lesions of the external auditory canal osteomas of the temporal bone are a definite rare occurrences, the commonest site being the squama and the mastoid. Generally, osteomas of the temporal bone occur in young individuals and those of the mastoid process are more common in females. Mastoid osteoma is usually single and grows from the outer table of the mastoid cortex producing an external swelling. Temporal bone osteomas are rare before puberty. They are slow growing and can remain stable for many years. These are usually asymptomatic and are detected as incidental radiological opacities. In most cases the diagnosis is obtained on plain radiography. They must be differentiated from other bony swellings whose prognoses are poor.

While the exact etiology of osteomas is not well understood, they are thought to arise from preosseous connective tissue. There is some evidence that osteomas are of congenital nature [1]. The most widely accepted

Fig. 1 : Showing a pedunculated osteoma (marked with an arrow) arising from right mastoid bone

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theories for the etiopathogenesis of osteomas include embryogenesis and metaplasia following recurrent local irritation and trauma. Osteomas of the skull are classified as, a) compact b) spongy and c) mixed. Compact osteoma have Haversian system. Those that have a dense sclerotic bone are also called ivory osteomas. Spongy osteomas have trabecular bone with marrow. They are also known as cancellous or osteoid osteomas. Osteomas are composed of lamellar bone, although osteomas of the ear canal have been reported to have a thin layer of woven bone on the surfaces of the lamellar bone [2]. Compact osteomas have a wider base and are very slow growing whereas spongy osteomas are more likely to be pedunculated and grow relatively faster.

It is important to differentiate osteomas from exostoses. They should be considered separate clinical entities. Osteomas are bony growths that are single, unilateral and pedunculated and arise from the tympanosquamous or tympanomastoid suture lines laterally, whereas exostoses are multiple, usually bilateral and broad based and are found medial to the sutures of the temporal bone [3]. Osteomas are true bone tumors and exostoses are thought to be a reactive condition secondary to multiple cold-water immersions or recurrent otitis externa. Disagreement still exists whether external auditory canal exostoses and osteoma should be considered as separate histopathological entities. JE Fenton et al in their study have concluded that they cannot be differentiated on routine histopathological examination [4]. Osteoma occurrence may be syndromic or non syndromic. They may occur as a feature of Gardener's syndrome, which is characterized by multiple intestinal polyps, epidermoid inclusion cysts, fibromas of the skin and mesentery and osteomas. Osteomas in Gardener's syndrome have a predilection for

membranous bones and as such the mandible and maxilla are more commonly involved [5].

Treatment is indicated for osteomas that are symptomatic or cosmetically unacceptable. Excision or drilling of superficial lesions of the mastoid and squama is a simple procedure. At surgery, since the lesions are always limited to the external cortex a cleavage plane is always encountered when tumor meets normal bone [6]. In mastoid osteomas extending into the fallopian canal and bony labyrinth, complete excision is not indicated since there may be damage to these structures. Follow up is needed in cases where partial excision is done or where expectant treatment is adopted.

It may be interesting to note that in our case the osteoma appeared compact on radiology but was osteoid on histopathology. This report is intended to record yet another rare case of mastoid osteoma to add to the body of reported cases.

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