

Unusually large mastoid antrum ('mega antrum')

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Abstract

Patients who present with a unilateral non-tender bony swelling in the mastoid region without any clinical evidence of middle ear infection could be diagnosed as having a fibrous or bony lesion affecting the temporal bone. In such cases, if there is radiological evidence of large lucent area in the mastoid antrum without any bony dehiscence one should keep in mind in the differential diagnosis a mega antrum in addition to congenital cholesteatoma and eosinophilic granuloma. A large lytic lesion in the mastoid segment of the temporal bone with an intact tympanic membrane therefore presents a diagnostic dilemma. A case of an unusually large mastoid antrum in a young adult with no middle ear suppuration and a cosmetically unacceptable swelling behind the ear is presented.

Mega antrum

An isolated lytic lesion of the temporal bone with an intact and undiseased tympanic membrane is usually suggestive of a

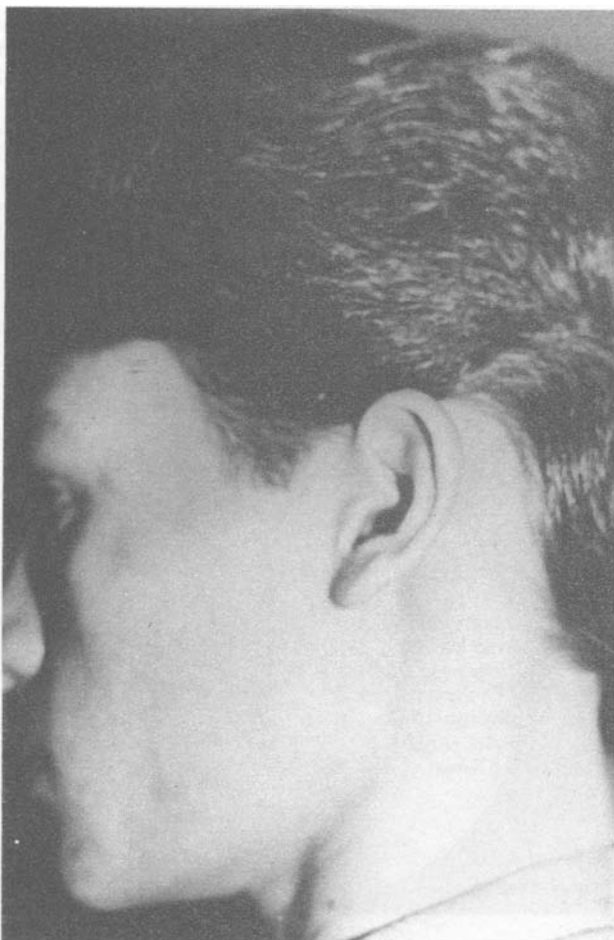


FIG. 1

Clinical photograph showing the left postaural swelling.

primary or congenital cholesteatoma (Brunner *et al.*, 1966). Less common conditions such as neoplastic growth or eosinophilic granuloma should also be kept in mind (Cawthorne and Griffith, 1961; Strake and Caprosa, 1972). Herzon and Antoine (1976) coined the term 'mega antrum' for an unusually large mastoid antrum which can present as a lytic lesion in the temporal bone. This anatomical variant is usually a radiological finding (Tillitt *et al.*, 1970). An unusually large mastoid antrum presenting as postauricular bony swelling is reported here for its rarity and the relevant literature is reviewed.

Case report

An 18-year-old male patient presented to ENT outpatients with a complaint of a painless bony swelling in the left postauricular region of 18 months duration. He gave no history of deafness, tinnitus, vertigo, nausea or vomiting. He did not give any previous history of ear discharge. Clinical examination revealed a postauricular, bony hard swelling, measuring 6 × 4 cm (Fig. 1), without any signs of inflammation. It had a smooth surface and skin was not involved. The pinna was not displaced. The tympanic membrane appeared dull and retracted but intact. Examination of the right ear showed a moderate sized dry central perforation with a congested middle ear mucosa seen

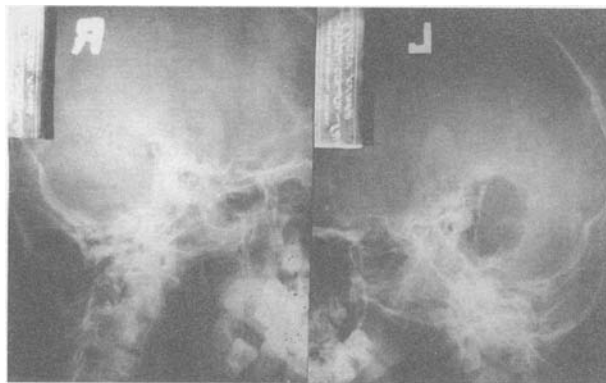


FIG. 2

Mastoid radiographs showing radiolucent area in left mastoid antrum.



FIG. 3 & 4
Showing the mega antrum.

through the perforation. The remaining clinical examination was within normal limits.

X-ray of the mastoids (Law's projection) showed a moderately pneumatized right mastoid and well pneumatized left mastoid with a large radiolucent area at the site of the antrum measuring 4×3.5 cm at its largest diameter (Fig. 2). A CT scan confirmed the presence of an unusually large mastoid antrum with an intact mastoid cortex. There was no bony dehiscence either in the dural or sinus plate (Figs. 3 & 4).

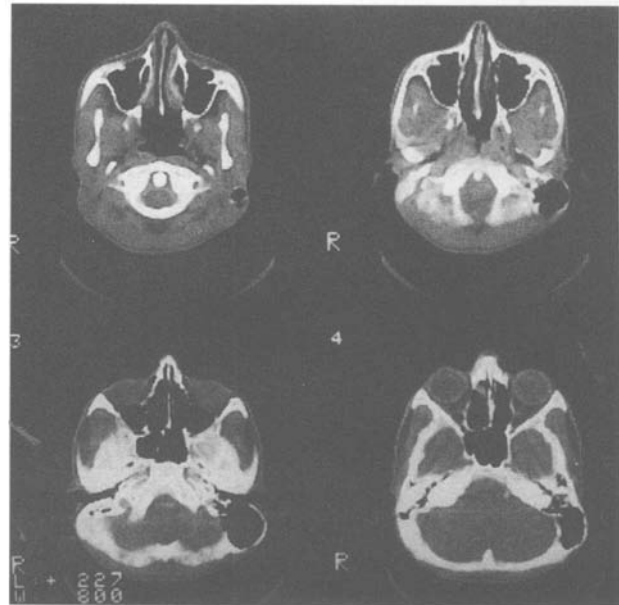
Under general anaesthesia, the left mastoid was explored by a postauricular approach. The cortex was very much thinned out. On removing the lateral cortical wall, a large cavity with thin normal mucosal lining was found, extending to the mastoid tip, beyond the sigmoid sinus into the parietal bone and to the floor of middle cranial fossa. There was no evidence of disease, bony dehiscence, or any communication with the posterior or middle cranial fossae or lateral sinus. The cavity was obliterated with an inferiorly based temporalis muscle flap and bone wax. The post-operative course was uneventful. A biopsy did not show any pathology either in the mucosa or in the bone.

Discussion

Scientific and methodical studies of the mastoid air cell system were started by Diamant in 1940. He used planimetric studies on a lateral X-ray film of the mastoid and showed that the average size of the normal mastoid air cell system was 12.07 cm^2 and that development was completed by the age of 10 years in females and 15 years in males.

An enlarged mastoid antrum is usually due to lytic lesions such as cholesteatoma, neoplastic disease or eosinophilic granuloma. A large mastoid antrum can mimic lytic disease. Classical teaching states that any increase in the size of the antrum is due to erosion of bone by a growing cholesteatoma. Brunner *et al.*, (1966) challenged this position by stating 'the antrum is sometimes enlarged but this can be a normal variation, which is always bilateral.' Our patient had a unilateral mega antrum. Tillitt *et al.*, (1970) and Herzon and Antoine (1976) described patients with large antra but none of them had an external swelling with thinning of the mastoid cortex such as the patient described in this paper.

Though mastoid X-rays gives a fair indication of the presence



of a mega antrum, a CT scan is very valuable in assessing the exact extent of the antrum the presence of any dehiscences. An exploratory mastoidectomy was necessitated in this case to confirm the diagnosis and the mastoid cavity was obliterated to prevent any major complications in the event of patient developing a subsequent middle ear infection. This case is particularly interesting because of the external swelling which could be mistaken for an osseous or fibrous lesion involving the temporal bone.

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