



## DERMOID TUMOUR OF THE MASTOID CAVITY

Ra Bradoo\*, Nk Nerurker\*\*, J Mhapankar\*\*\*, D Kute\*\*\*\*

\*Head; \*\*Lecturer; \*\*\*Resident, Department of ENT, LTMG Hospital, Sion, Mumbai 400 022.

Dermoids and teratomas are frequently described in the head and neck, but are rarely found in the middle ear or temporal bone. We have recently managed a case of dermoid of the mastoid cavity extending to the retrofacial area and exposing both the tegmen tympani and sinus plate. The purpose of this article is to report the presentation and management of this case and to review the literature with respect to this entity.

### CASE REPORT

A 62 year old male patient came to the outpatient department of our hospital with the chief complaints of left sided otorrhoea since childhood with deep boring pain. The patient had left sided otalgia since 5 months and complained of tinnitus off and on. The patient also complained of bilateral decreased hearing with right ear more affected than left. The patient never had facial palsy or paresis.

The patient had been treated for pulmonary tuberculosis 4 years ago and was receiving treatment for bronchial asthma.

The examination of the left ear revealed an erosion of the posterior and inferior bony canal wall with an intact tympanic membrane. An Audiogram performed revealed left mild conduction loss with profound mixed loss in higher frequencies. The right ear had a central perforation and the audiogram revealed right moderate-severe conductive loss (Fig. 1). Thus the left ear for which the patient sought treatment was actually the better hearing ear.

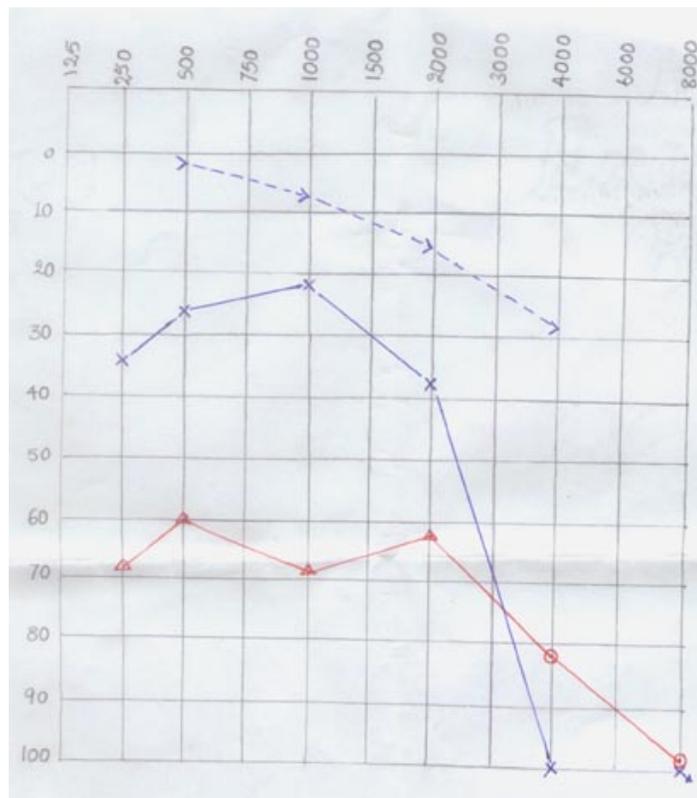


Fig 1 Pre-operative audiogram of the patient

An X-ray Schuller's view showed bilateral sclerosis of the mastoids. A CT Scan was performed, which revealed a destructive lesion involving the left temporal bone - mastoid and styloid process.

Repeated biopsies of the granulation over the posterior canal wall revealed no conclusive results.

The left ear was explored under general anaesthesia to obtain tissue for histopathology. An endomeatal incision was taken and a tympanomeatal flap was elevated over the eroded posterior canal wall to reveal whitish material with bony spicules. A biopsy of this was taken.



Fig 2. The CT Scan of the patients left temporal bone showing destructive lesion involving left temporal bone, mastoid and styloid process

### Pathological examination

Histopathology of the biopsy sample revealed flakes of keratin and bits of stratified squamous epithelium with blood clots consistent with a diagnosis of dermoid cyst. There was no evidence of tuberculosis or malignancy and no fungal growth was obtained on culture.

### Surgical procedure

Having diagnosed the presence of a dermoid cyst in the left temporal bone, a modified radical mastoidectomy was planned for the patient. Keeping in mind that this was the better hearing ear. The surgeon's attempt was to preserve hearing as much as possible without compromising on eradication of disease and the safety of the patient.

A postaural modified radical mastoidectomy was performed. A large cyst lined by stratified squamous epithelium and filled with bony spicules, polypoidal masses and a single fat globule in the cavity was removed. This cyst had exposed the sigmoid sinus and dural plate which was covered with granulations. There were two deep pockets of the cyst, one going anterior and inferior to middle ear and the other in the tip region going into the retrofacial area, deep to facial nerve. These areas were cleared off the cyst. Interestingly the middle ear was totally intact (Figs. 3 and 4). A wide meatoplasty with a conchotomy was created.

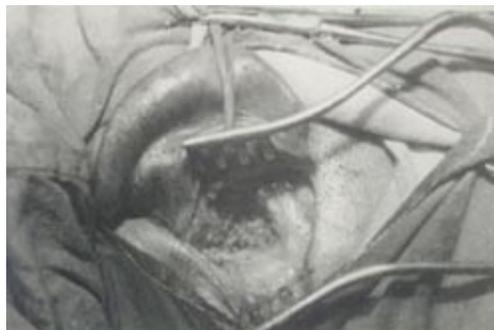


Fig3 . An intra-operative photograph showing mastoid cavity filled with loose cancellous bone chips.

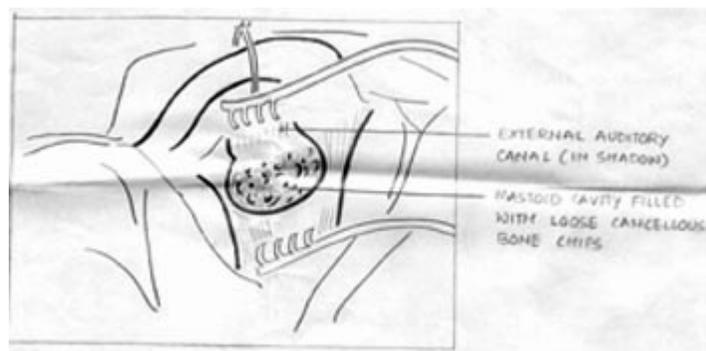


Fig 4. A diagrammatic representation of the intra-operative photograph

The patient's cavity healed very well postoperatively and his hearing remained at pre-operative level (Fig. 5). Since the last 6 months the patient has been following up in the OPD and regular examination of the ear reveals a dry and well epithelialised cavity.

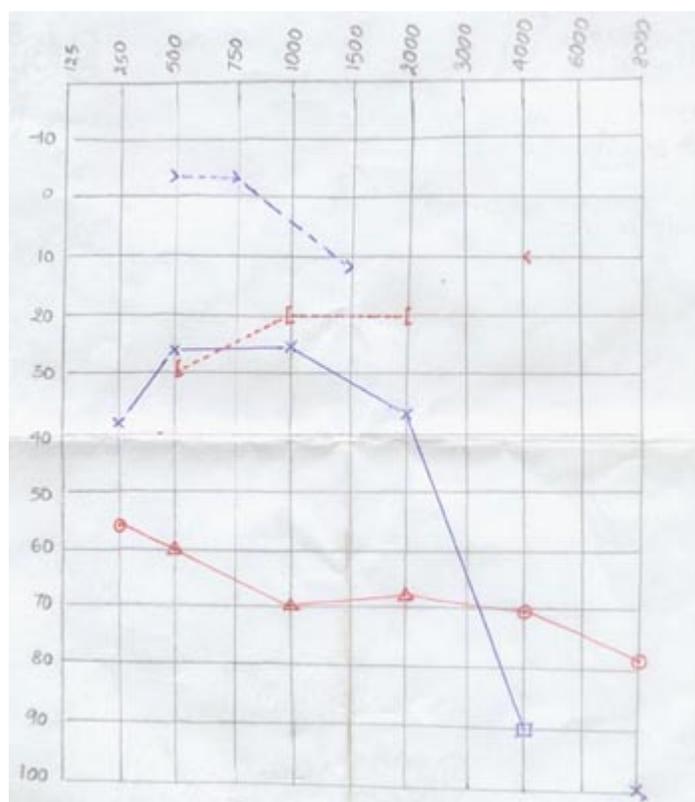


Fig 5. The patients post-operative audiogram

## DISCUSSION

Dermoids are the most common and most elementary forms of teratoma.[1]

Dermoid cysts are congenital lesions resulting from inclusion of ectodermal tissue during closure of the neural tube.[2] During the development of the bones of the cranium, the embryonic ectoderm and the periosteum are in apposition at the definitive suture lines. It is believed that some pieces of ectoderm may get pinched off as the suture lines close. It is in this ectopic location that they develop into dermoid cysts. In the head and neck region the commonest location is at the frontotemporal or upper outer quadrant of the orbit.

Dermoid cysts may infrequently occur primarily in the temporal fossa.

The dermoid cyst of the patient being discussed had fortunately spared the facial nerve as well as the ossicular

chain. However due to the presence of 2 deep pockets of the cyst, one anterior to the facial nerve and the other retrofacial, the complete exenteration of the cyst resulted in an apparently high facial ridge. Rerouting of the facial nerve was considered but decided against for two reasons-firstly the middle ear was left untouched so as to preserve hearing in this better hearing ear and secondly a large conchotomy ensured good postoperative access to all areas of the cavity.

## REFERENCES

1. Ernest E, et al. Dermoid of petrous apex. Laryngoscope June 1984; 94.
2. Hong SW. Deep Frontotemporal dermoid cyst presenting as a discharging sinus, a case report and review of literature. British Journal of Plastic Surgery 1998; 51 : 255-57.

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