



Hearing Loss Secondary to Unidentifiable Middle Ear Mass

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Case Report

A 33 year-old male with a long-standing history of unilateral conductive hearing loss and concern for middle ear effusion, who had previously undergone multiple attempts at ventilation tube placement without improvement, was evaluated by our Otologist.

Flexible nasal endoscopy revealed a normal nasopharynx and Eustachian tube openings.

He was taken for a middle ear exploration in the operating room via a transcanal approach. A large soft, pink, polypoid mass was found filling the middle ear space and extending into the Eustachian tube. The mass appeared to be well-defined

The mass was removed entirely through the canal in fragments. There was no evidence of residual tumor or ossicular abnormality at the conclusion of the procedure.

Pathology revealed a polypoid mass with interlacing trabeculae of epithelial cells in a papillary and inverted type pattern amid a lymphoid stroma. The tumor was diffusely positive for CK 5/6, partially positive for EMA and CK 7, as well as S100 and p63. Only occasional scattered cells were positive with mucicarmine.

Patient returned to the office 11 days after surgery with significantly improved subjective hearing.

Final pathologic diagnosis was **low grade papillary squamoproliferative neoplasm**, lacking sufficient criteria to be definitive for malignancy.

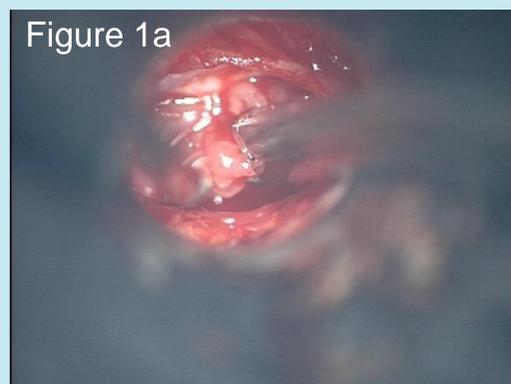


Figure 1a

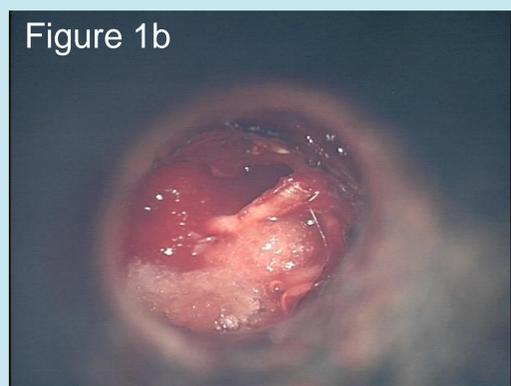
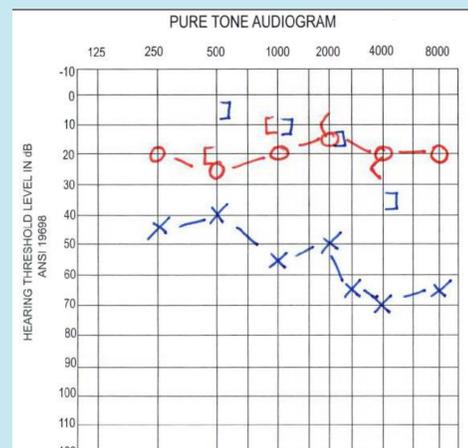


Figure 1b

Figure 1: (a) Intraoperative image of middle ear mass (b) The tympanic membrane was elevated off the malleus and the mass entirely removed. Gelfoam seen in middle ear prior to replacement of the tympanomeatal flap.

Outcomes

- Expert pathologists at our institution and outside institution consultants could not define the lesion.
- Repeat audiogram at 3 months showed significant improvement in hearing with small residual air-bone gap.



Discussion

- The differential diagnosis of a middle ear mass consists of middle ear inflammatory polyp, glomus tumor, and Schneiderian-type papilloma.
- This middle ear mass shares the most resemblance to a Schneiderian-type papilloma, which most commonly occurs in the sinonasal tract. In the middle ear they are hypothesized to be derived from ectopic inclusion of ectodermal Schneiderian mucosa. Long-term follow up is required due to high rates of reoccurrence and possibility of malignant conversion.¹
- The most common primary neoplasm of the middle ear is the glomus tumor (paraganglioma). Glomus tumors are derived from neural crest and are normally associated with the autonomic system. The vast majority of glomus tumors are benign.²
- Middle ear malignancies are rare and aggressive with an incidence of less than 0.2% of all tumors of the head and neck. There is estimated to be one case of middle ear carcinoma for every 5,000 to 20,000 cases of ear disease.³

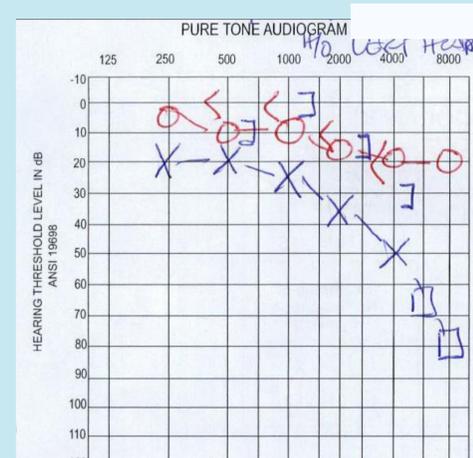


Figure 2: Pre-operative and post-operative audiogram findings with post-operative decrease of air-bone gap.

Discussion (con'd)

- Middle ear carcinomas tend to be squamous in origin and associated with chronic or recurrent ear infection with discharge.⁴
- Suspicion for malignancy should be increased when chronic suppurative otitis media or cholesteatoma is accompanied by sudden severe earache, bleeding or facial palsy.⁴
- Treatment is largely surgical excision for a benign lesion. Radiotherapy is often added for malignant lesions.

Conclusions

Rarely, unilateral conductive hearing loss may be secondary to a middle ear mass. An unusual polypoid mass is reported, tentatively diagnosed as unspecified squamous papillary neoplasm. Most middle ear masses are benign but malignancies tend to be aggressive in nature. Resection is often effective for benign lesions, with the addition of radiotherapy for malignancies.

References

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