



Symptom: Ear Pressure

By Hamid R. Djalilian, MD

An 80-year-old patient comes to the office complaining of pressure in his left ear. He states that he has muffled hearing and a pulsatile sound of his heartbeat in the ear, and that the problem has persisted for six months without improvement.

The patient, who is Vietnamese, says that he last traveled to Vietnam five years ago, and his cousin had the same problem.

Upon questioning, he denies having had an upper respiratory infection or nasal allergies preceding these symptoms. He said he has had no recent trauma to his ear, problems with headaches, or previous issues with ear infections.

The patient was treated with two courses of antibiotics, as well as with decongestants and antihistamines, but none of the therapies improved his symptoms.

What is your diagnosis? See p. 14.

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Below is an image of his ear. Visualization of the ear under microscopy shows a pulsatile movement of the tympanic membrane.



In this image of the left tympanic membrane, note its dull appearance.

Diagnosis: Nasopharyngeal Carcinoma

By Hamid R. Djalilian, MD

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The most likely cause of middle ear effusion in older adulthood is Eustachian tube dysfunction. The theoretical basis for this increased incidence is fibrosis of the tensor veli palatini muscle, which helps open the Eustachian tube.

In children, a unilateral effusion is not uncommon. It occurs in the setting of upper respiratory infections, allergic rhinitis, post-otitis media, and acid reflux affecting the Eustachian tube.

An older adult with a unilateral effusion that was not preceded by an upper respiratory infection or allergic rhinitis should raise one's suspicion. Worrisome conditions that can cause this problem include a spontaneous cerebrospinal fluid leakage and a skull base tumor obstructing the Eustachian tube.

EXAMINING THE NASOPHARYNX

In the setting of a unilateral middle ear effusion in an older adult, a nasopharyngeal examination is always performed. The Eustachian tube opens in the nasopharynx, which can be examined using a mirror through the mouth or, better yet, a flexible fiber-optic scope through the nose.

In the nasopharynx, one's attention is directed at the opening of the Eustachian tube to evaluate for any obstruction. The other area that requires careful examination is the space behind the Eustachian tube orifice, termed the fossa of Rosenmüller. This area is the most common location for the development of nasopharyngeal carcinoma.

SIGNS AND SYMPTOMS

Nasopharyngeal carcinoma is the most common cancer involving the nasopharynx, occurring most often in patients

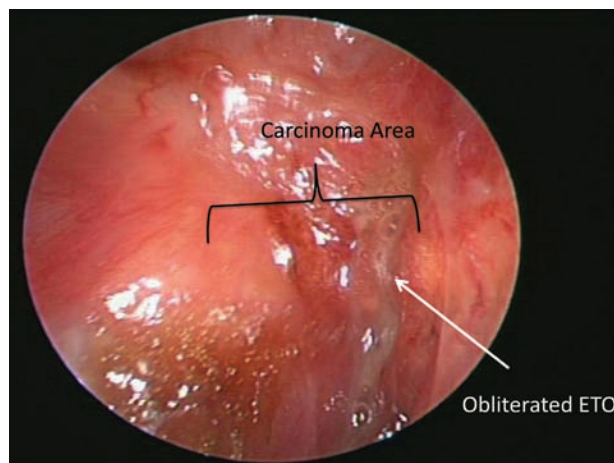


Figure 1. This image of the left side of the nasopharynx shows a mass and obliteration of the Eustachian tube orifice.

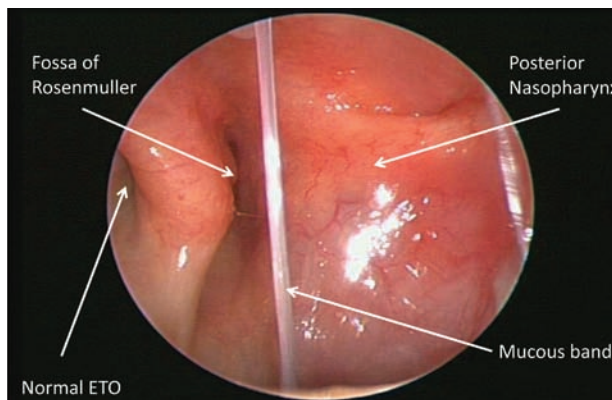


Figure 2. This image of the right side of the patient's nasopharynx shows the normal Eustachian tube orifice.

of East Asian and African origin. It is thought to be caused by a combination of viral infection, diet, and genetic factors that together increase the risk of development.

Epstein-Barr virus DNA has been detected in the blood of 96 percent of patients with type II or III nasopharyngeal carcinoma, compared with seven percent of control patients. Consumption of certain foods, especially salted fish, also has been associated with an increased risk of nasopharyngeal carcinoma.

The most common presenting sign in patients with this condition is a neck mass, which signals metastatic disease in the neck. A unilateral middle ear effusion is the second most common presenting sign.

As the cancer grows from behind the Eustachian tube, it obstructs the cartilaginous portion. Eventually, the cancer grows into the cartilage, obliterating the Eustachian tube, as seen in *figure 1*. For comparison, *figure 2* shows the right side of the patient's nasopharynx with the normal Eustachian tube orifice.

Other signs on presentation include regurgitation of food into the nose due to one-sided paralysis of the palate, trismus (inability to open the mouth), and paralysis of cranial nerves III-VI.

SUCCESSFUL TREATMENT

Nasopharyngeal carcinoma is usually treated with a combination of radiation and chemotherapy. Treatment generally is successful.

Otologic problems persist as the Eustachian tube opening is destroyed by cancer. Patients have long-term difficulty with middle ear effusion, and are offered a myringotomy and tube or a hearing aid.

Some patients may develop sensorineural hearing loss from chemotherapy regimens containing cisplatin or from radiation therapy causing cochlear damage. Long-term monitoring of these patients is needed. ■