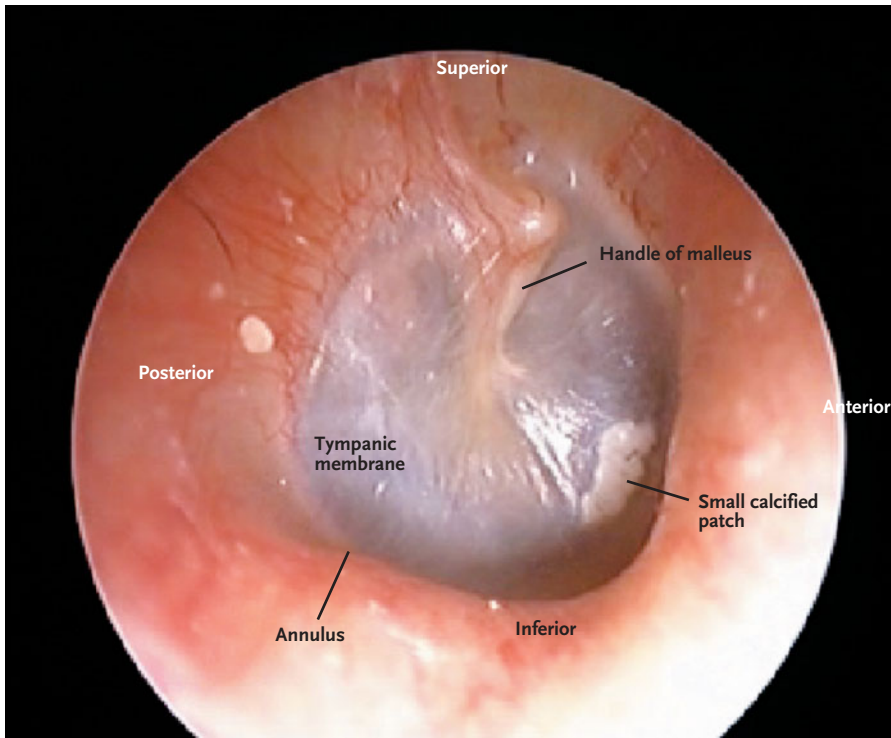


IMAGES IN CLINICAL MEDICINE

## Patulous Eustachian Tube



A HEALTHY 26-YEAR-OLD MAN REPORTED A THREE-MONTH HISTORY OF aural fullness and a flapping noise in his right ear. Otoscopy revealed inward-and-outward movements of his right tympanic membrane in time with his nasal respiration (Video Clip 1). Both the symptoms and the motion in his eardrum were greatly reduced when he lay down. We diagnosed a patulous eustachian tube, signifying abnormal patency of the tube. This anomaly permits the movement of air into and out of the middle ear by means of the eustachian tube during nasal breathing. The tympanic membrane moved outward when the patient exhaled, owing to the transmission of positive nasopharyngeal air pressure (relative to the atmospheric pressure) to the middle ear. When the patient inhaled, the tympanic membrane moved inward because of the opposite mechanism. Adopting a recumbent position relieved the symptoms because of increased venous stasis and passive compression of the eustachian tube.

A patulous eustachian tube is associated with pregnancy, rapid weight loss, mucosal atrophy (e.g., that due to atrophic rhinitis or occurring after radiotherapy), or muscular dysfunction. In many instances, however, a satisfactory explanation cannot be found, as was the case with this patient. The patient was treated with the insertion of a grommet into the right tympanic membrane, which led to the resolution of his symptoms.

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