

DISCLOSURE

NONE

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WHERE I AM FROM



Fortaleza, 3 million

OBJECTIVES

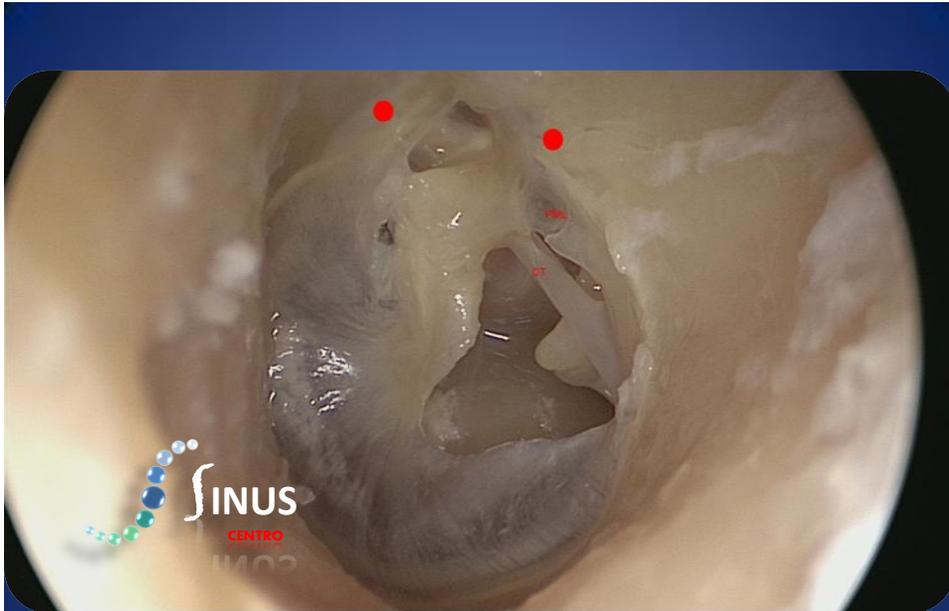
- Develop an understanding of the endoscopic anatomy of the middle and inner ear through transcanal access.
- Develop the necessary hand-eye coordination and hands skills to perform endoscopic ear surgery.
- Perform in the lab the specific steps involved in tympanoplasty.
- Perform in the lab the exploration of all the cholesteatoma bearing areas of the middle ear.
- Understand the anatomy of the cholesteatoma bearing areas of the middle ear



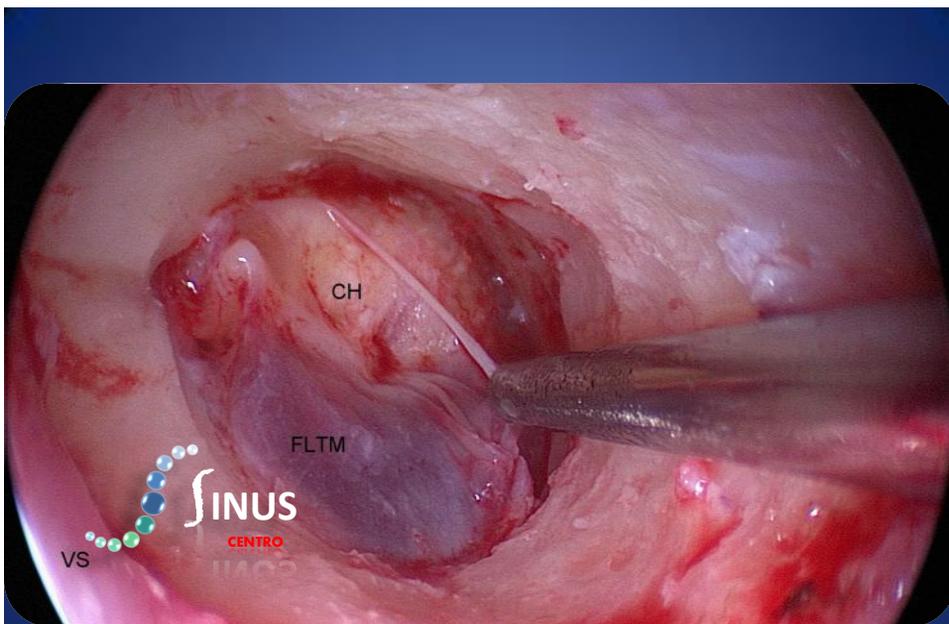
Right Ear: Endoscopic view of the TM in a right ear with cholesteatoma visible behind the TM. Note the blood vessels arising from the ear canal and supplying the TM.



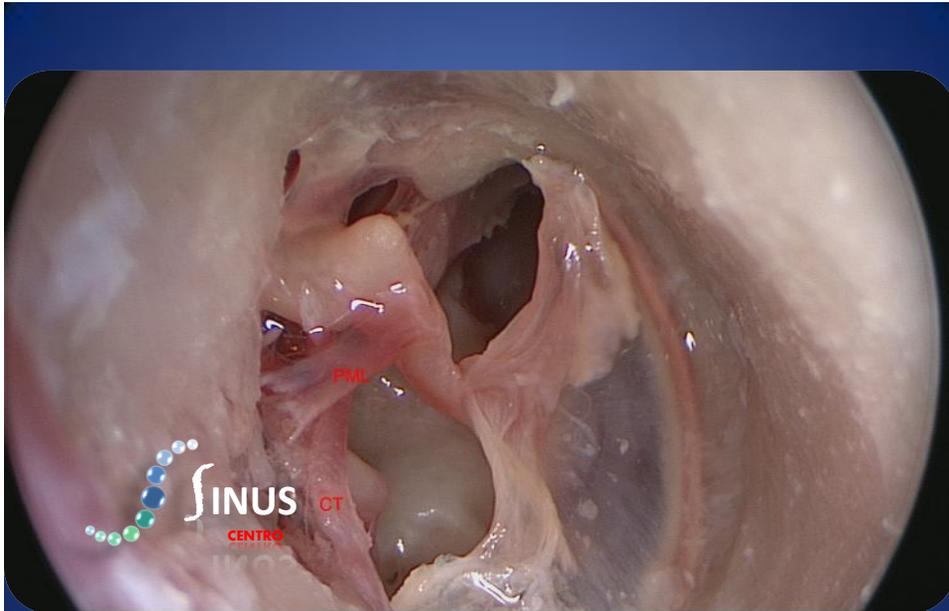
Left Ear: The view through the endoscope of an anatomic specimen with a small perforation. Note the size and location of the significant anterior overhang.



Left Ear: The skin of the canal has been removed along with the epithelial layer of the TM. The ear canal has been enlarged. Note the limits of the fibrous annulus: red circles; CT: Corda Tympani; PML: Posterior Malleolar Ligament.



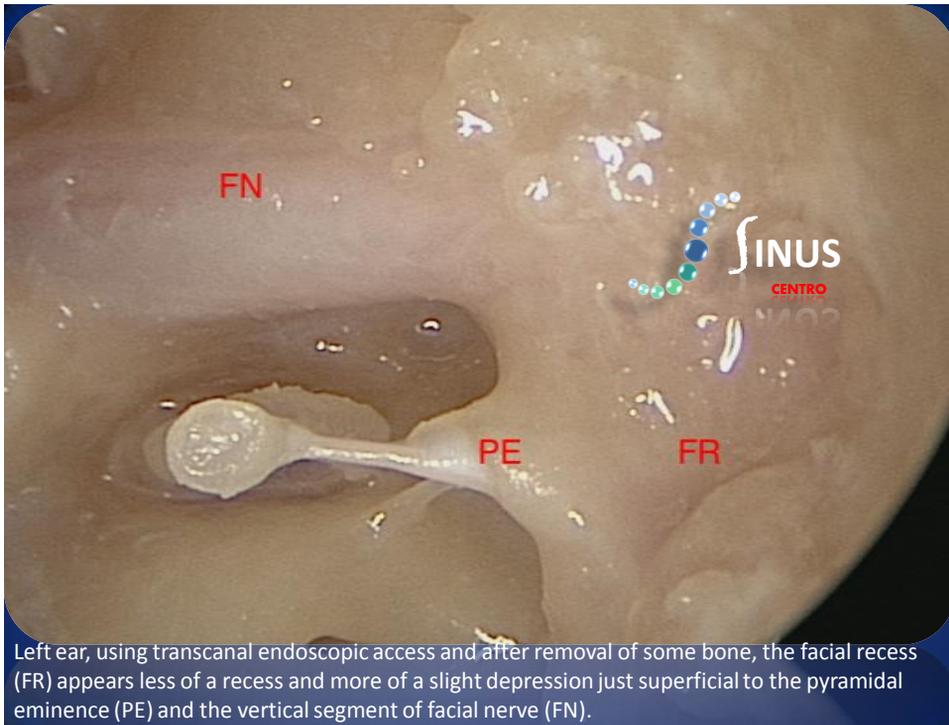
Right Ear: The canal wall is curetted to obtain a full view of the tympanic ring in one view using the 0 degree endoscope. VS: Vascular strip; FLTM: Fibrous layer of tympanic membrane; CH: Cholesteatoma.



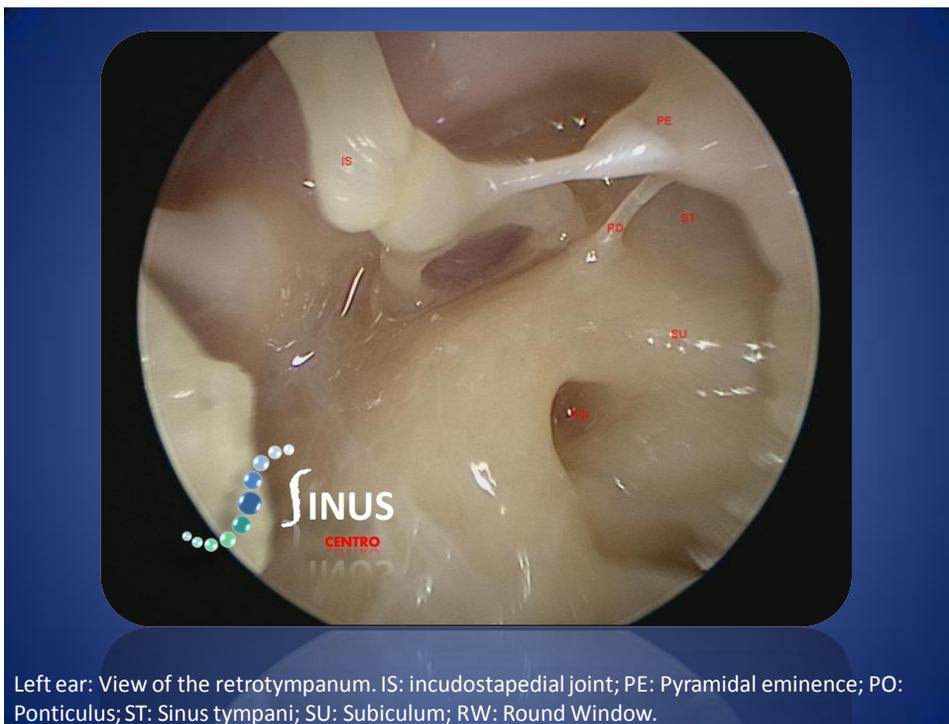
Right Ear: Fibrous layer of the TM is pulled down off the handle of Malleus revealing the Posterior Malleolar Ligament (PML) and the Corda Tympani (CT)



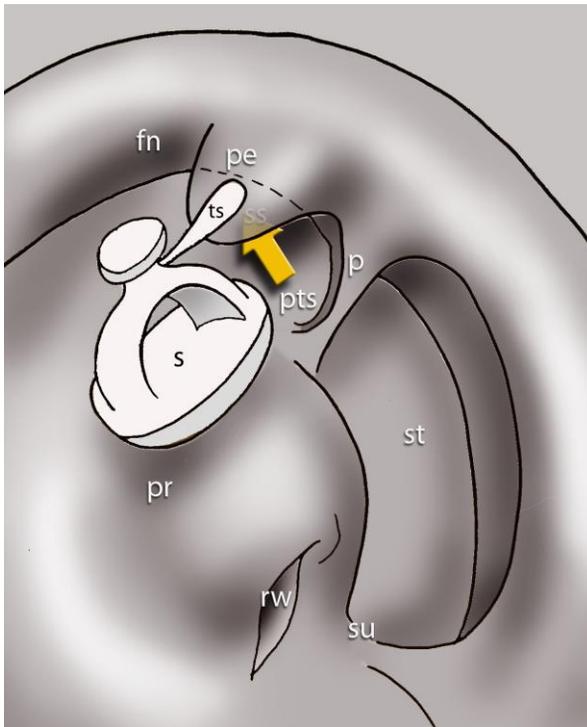
Left ear: The fibrous layer of the TM along with the fibrous annulus is removed and separated from the handle of malleus. TT: The tendon of the tensor tympani.



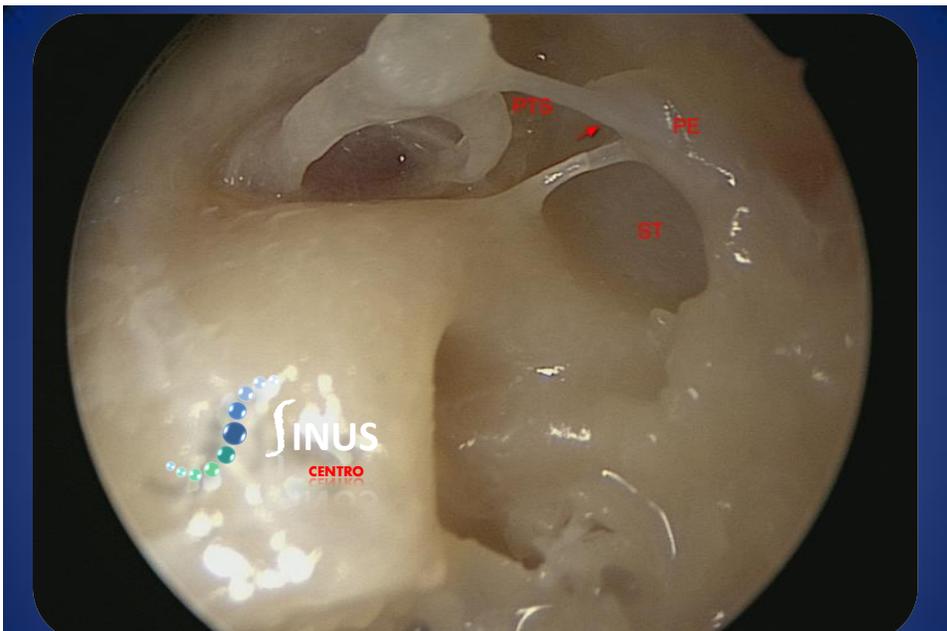
Left ear, using transcanal endoscopic access and after removal of some bone, the facial recess (FR) appears less of a recess and more of a slight depression just superficial to the pyramidal eminence (PE) and the vertical segment of facial nerve (FN).



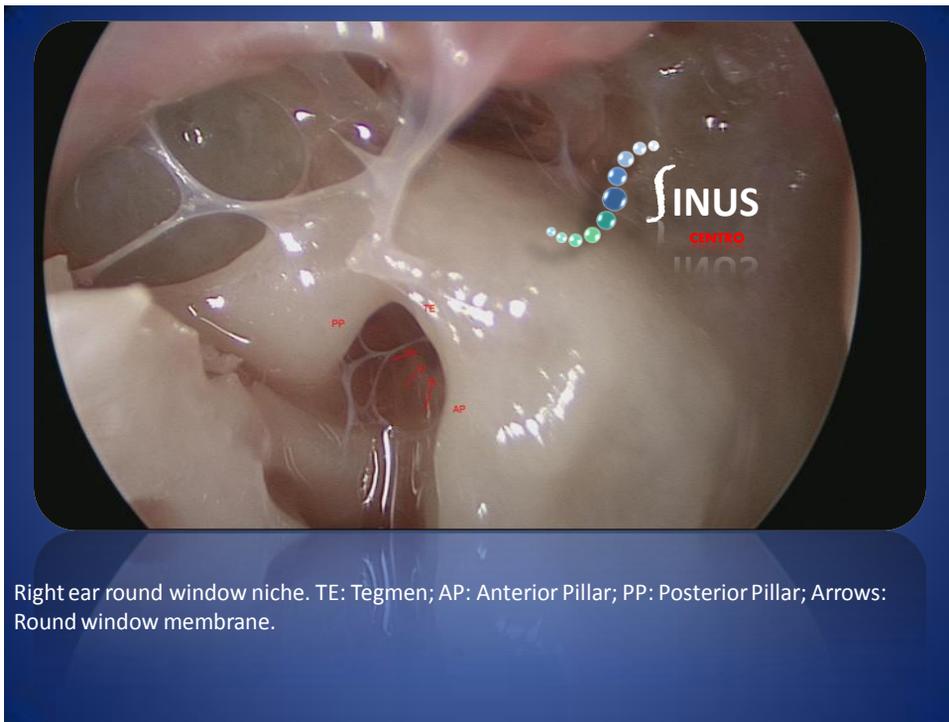
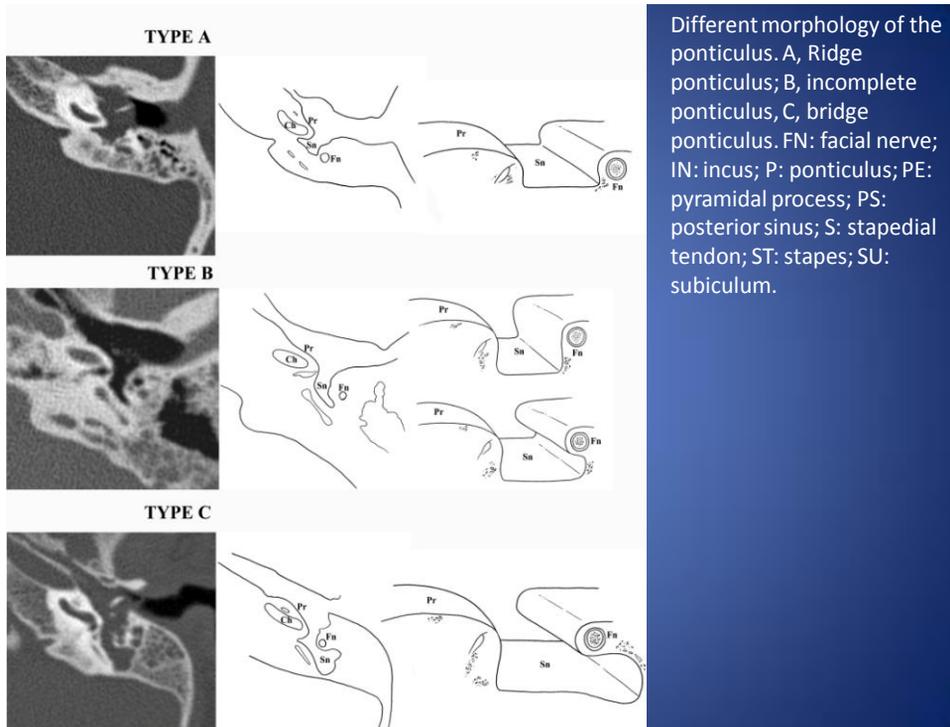
Left ear: View of the retrotympanium. IS: incudostapedial joint; PE: Pyramidal eminence; PO: Ponticulus; ST: Sinus tympani; SU: Subiculum; RW: Round Window.

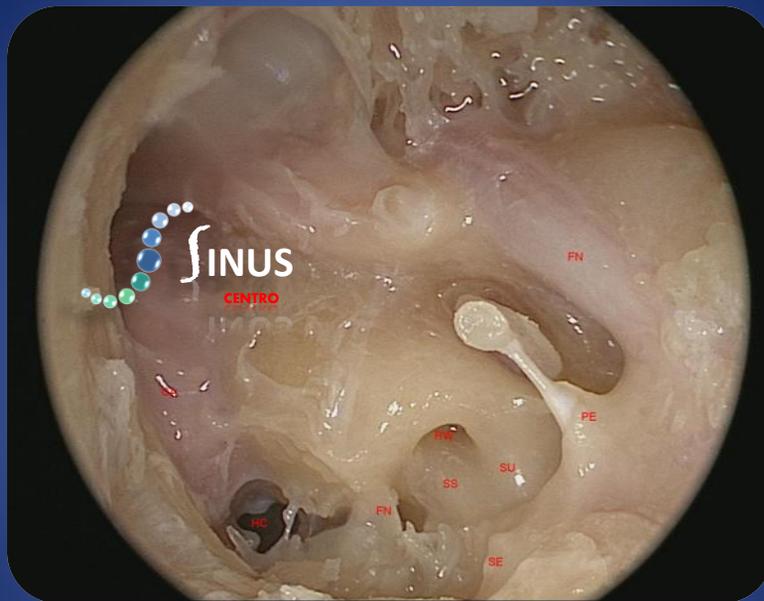


Left ear: Arrow: Sub pyramidal space. S: Stapes; FN: Facial nerve; ST: Sinus tympani; RW: Round window; PE: Pyramidal eminence; PTS: posterior tympanic sinus.

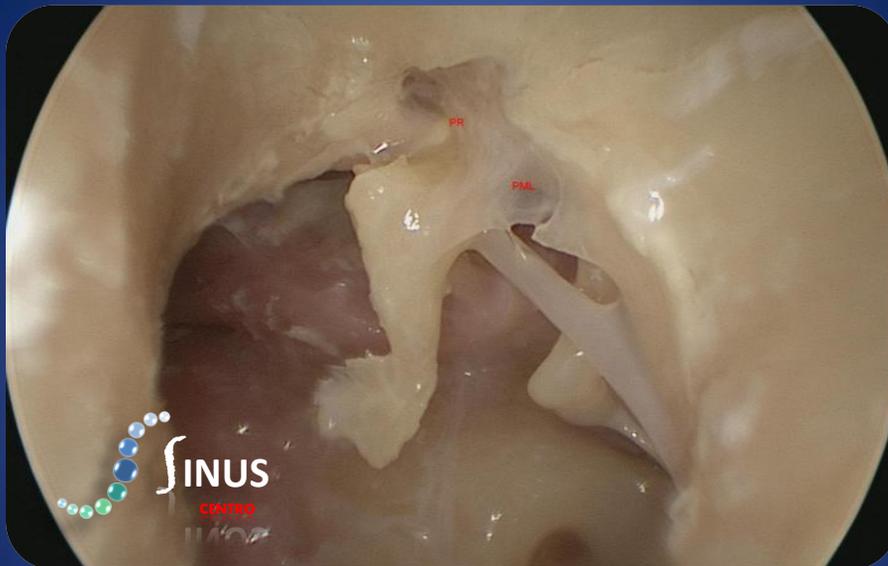


Left ear: Note the entry points of the sub pyramidal space in this specimen is type A, connecting to both the sinus tympani and the posterior tympanic sinus. Arrow: Sub pyramidal space; ST: sinus tympani; PE: Pyramidal eminence; PTS: Posterior tympanic sinus

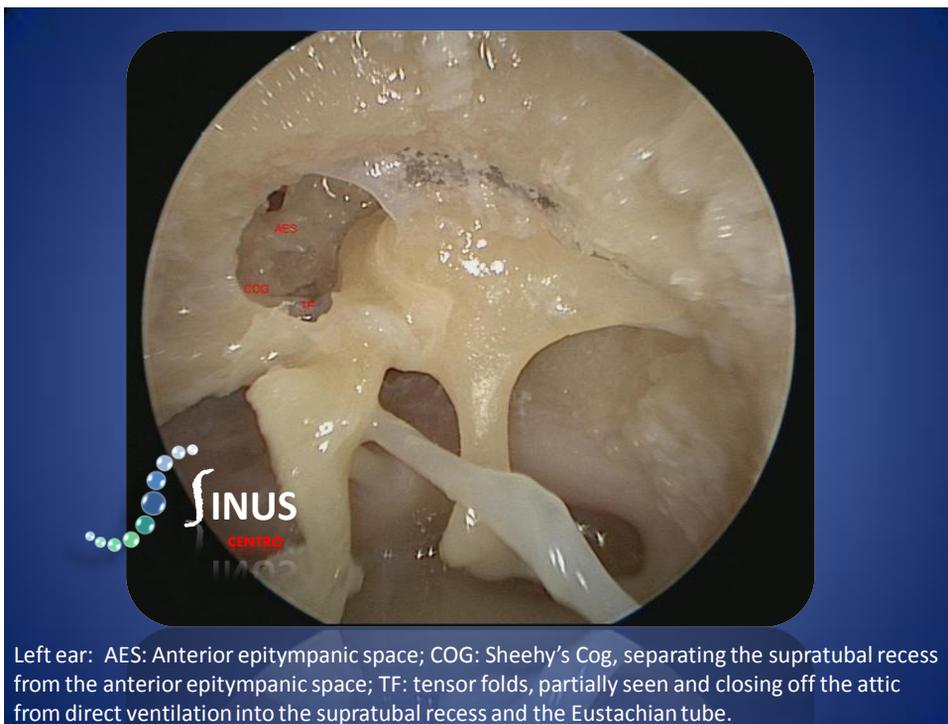
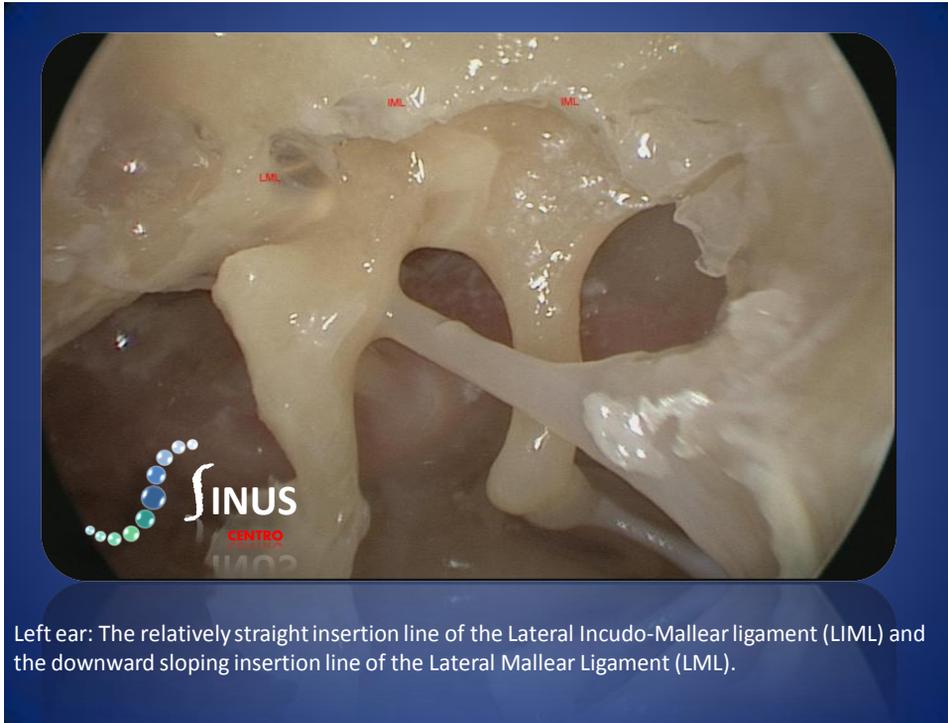




Left ear: Overview picture of the tympanic cavity with special attention to the retrotypanum.
 FN: Facial nerve; SU: Subiculum; SS: Sinus subtypanicus; SE: Styloid eminence; RW: Round window; FN: Finculus; CA: Crotid artery; HC: Hypotympanic air cell.

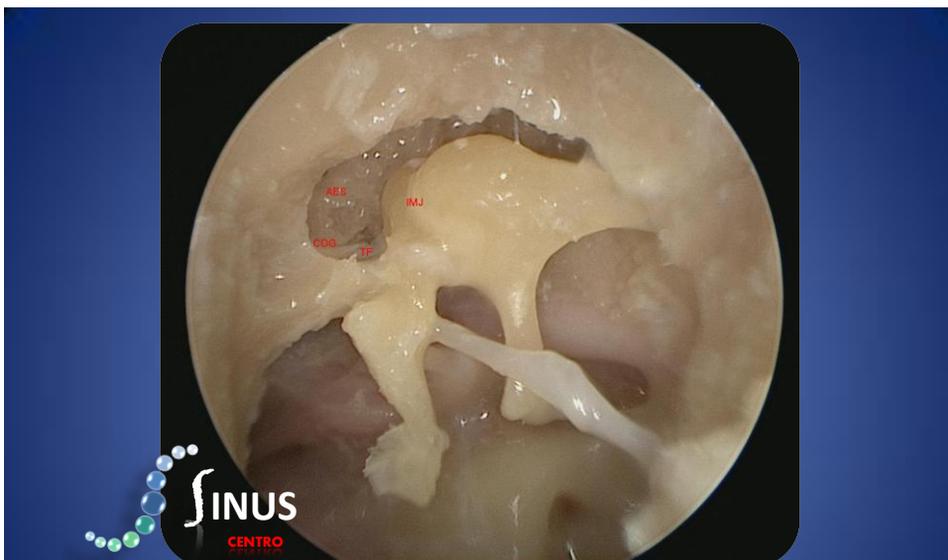


Left ear: PR: Prussak Space; PML: Posterior malleolar ligament





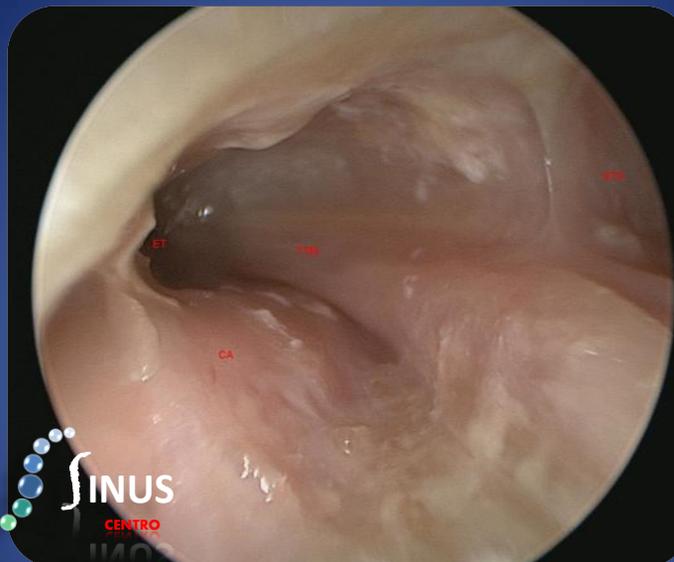
Left ear close up examination of the anterior epitympanic space. AES: Anterior epitympanic space; COG: Sheehy's Cog, separating the supratubal recess from the anterior epitympanic space; TF: tensor folds, partially see and closing off the attic from direct ventilation into the supratubal recess and the Eustachian tube.



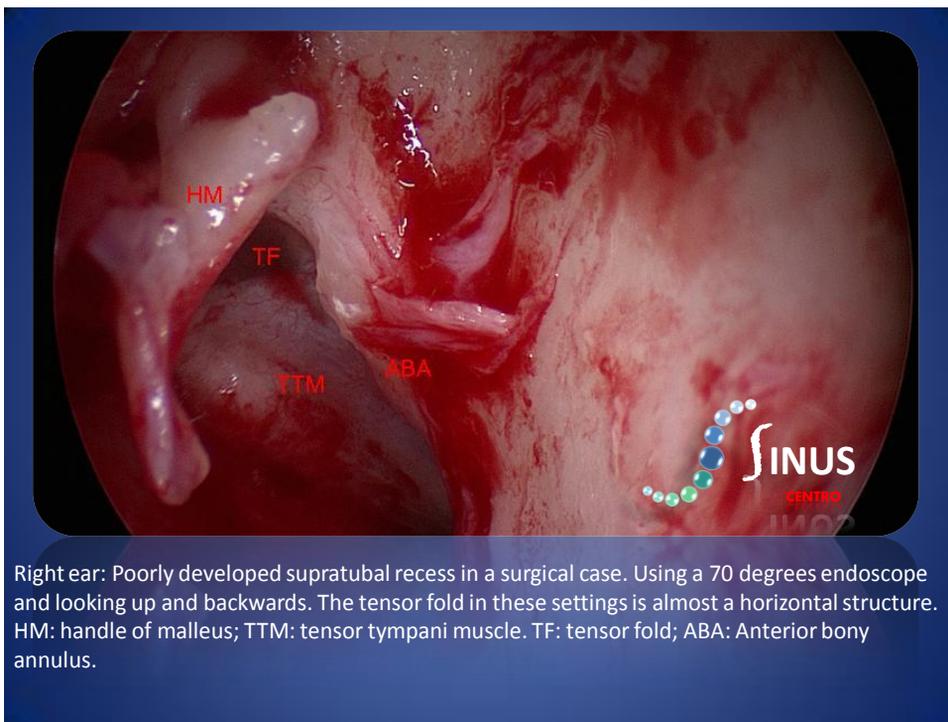
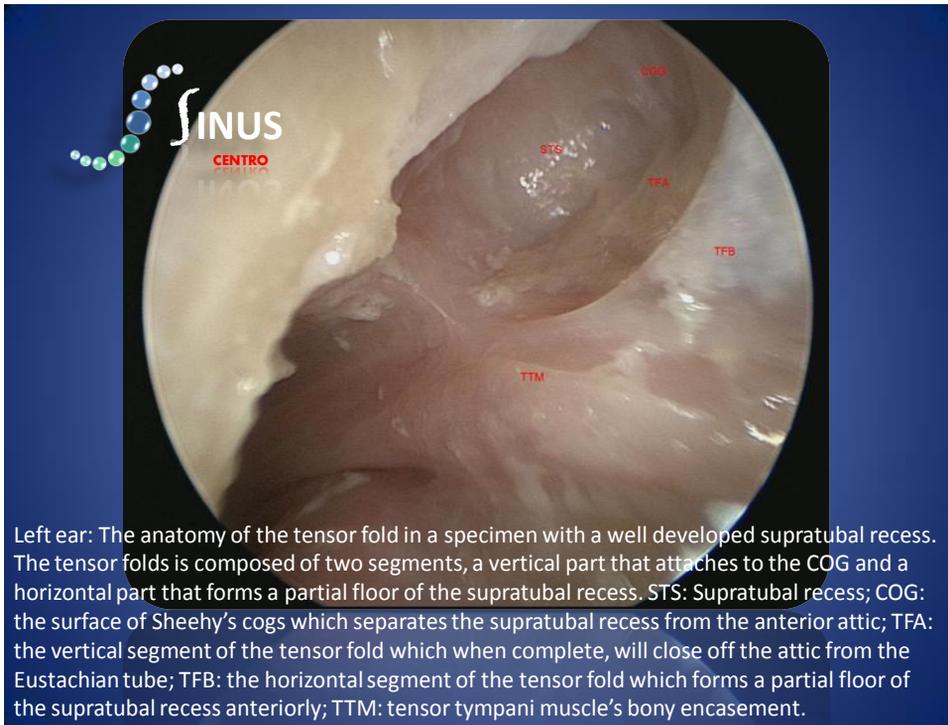
Left ear: the ossicles are fully exposed within the attic and the incuo-malleal articulation line is visible. IM: Incudo malleal joint; AES: Anterior epitympanic space; COG: Sheehy's Cog, separating the supratubal recess from the anterior epitympanic space; TF: tensor folds, partially see and closing off the attic from direct ventilation into the supratubal recess and the Eustachian tube.

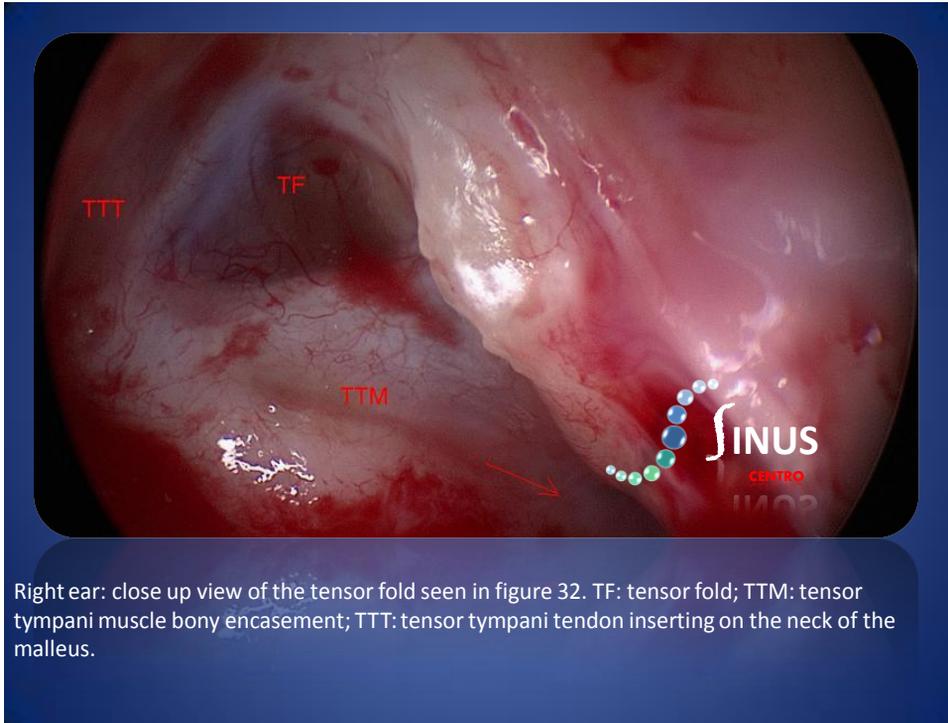


Left ear: HM: handle of malleus; STS: Supratubal recess; COG: the anterior surface of Sheehy's cogs which separates the attic from the supratubal recess; TFA: the vertical segment of the tensor fold which when complete, will close off the attic from the Eustachian tube; TFB: the horizontal segment of the tensor fold which forms a partial floor of the supratubal recess anteriorly; TTM: tensor tympani muscle's bony encasement; BA: Bony annulus; CA Carotid artery.

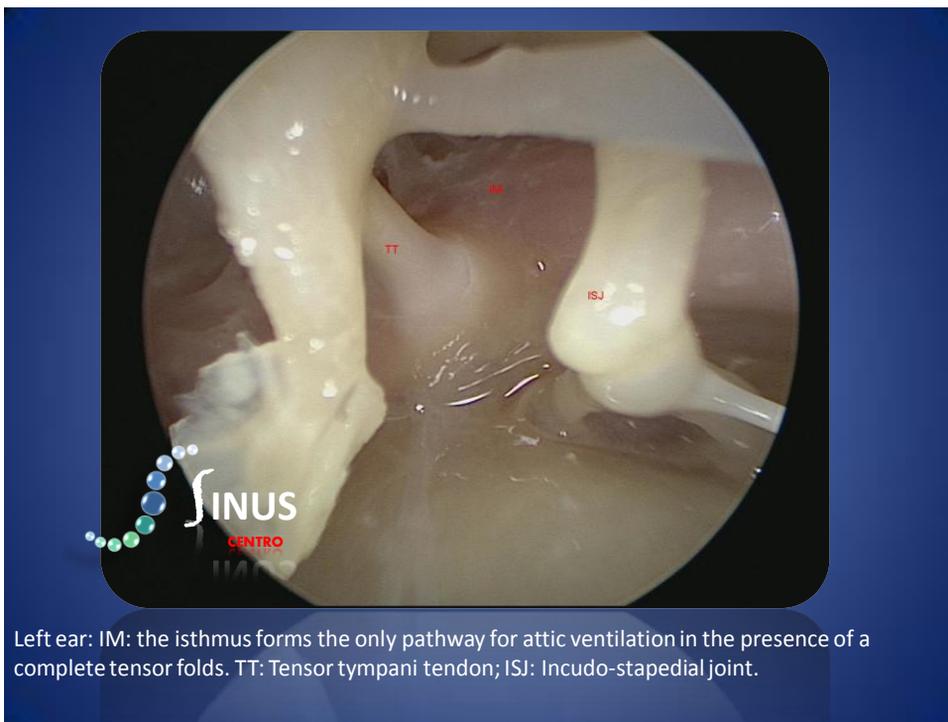


Left ear: Looking down the Eustachian tube. ET: Eustachian tube; TTM: tensor tympani muscle's bony encasement; BA: Bony annulus; CA Carotid artery.





Right ear: close up view of the tensor fold seen in figure 32. TF: tensor fold; TTM: tensor tympani muscle bony encasement; TTT: tensor tympani tendon inserting on the neck of the malleus.



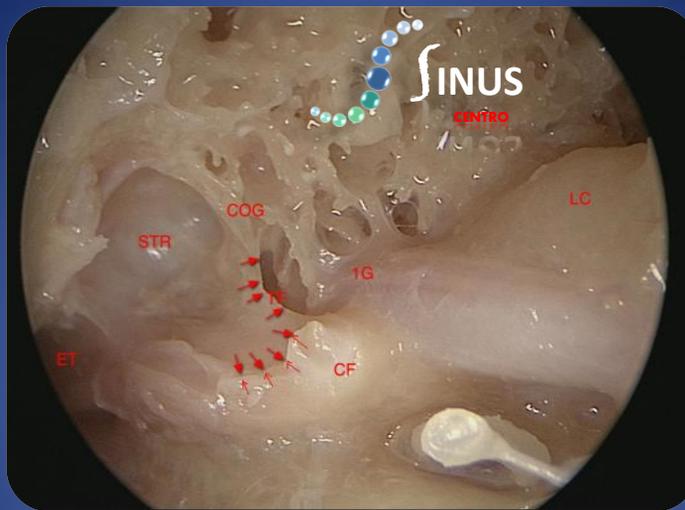
Left ear: IM: the isthmus forms the only pathway for attic ventilation in the presence of a complete tensor folds. TT: Tensor tympani tendon; ISJ: Incudo-stapedial joint.



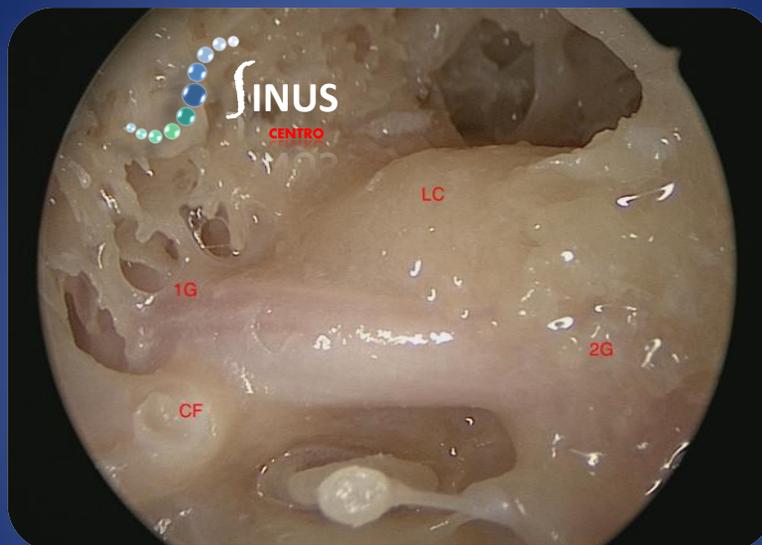
Left ear; the incus has been removed. AS: articular surface of the head of malleus; FN: horizontal segment of the facial nerve; SC: Lateral semicircular canal; AA: Additus antrum; CD: Corda Tympani; TT: Tensor tympani tendon.



Left ear attic after removal of the incus. AS: Articular surface of the head of malleus. SL: remnant of the superior ligament of the incus attaching to the tegmen.



Left Ear: The tensor tendon is transected and the handle of the malleus is removed, so was the anterior spine, anterior malleolar ligament and the corda tympani. COG: Sheehy's COG; Single arrows: insertion point of the partially removed vertical segment of the tensor fold; Double arrows: insertion point of the completely removed horizontal segment of the tensor fold; STR: Supratubal recess; ET: Eustachian tube; CF: Cochleariform process; 1G: First genu of the facial nerve and neighboring geniculate ganglion; LC: Lateral semicircular canal.



Left ear: The horizontal segment of the facial nerve and it relationship to the lateral semicircular canal. 1G: First genu; 2G: second genu; LC Lateral canal; CF: Cochleariform process.