ΝΕΟΤΕΡΑ ΔΕΔΟΜΕΝΑ ΣΤΟ ΧΟΛΟΣΤΕΑΤΩΜΑ: Έγκαιρη διάγνωση και ελάχιστη παρέμβαση

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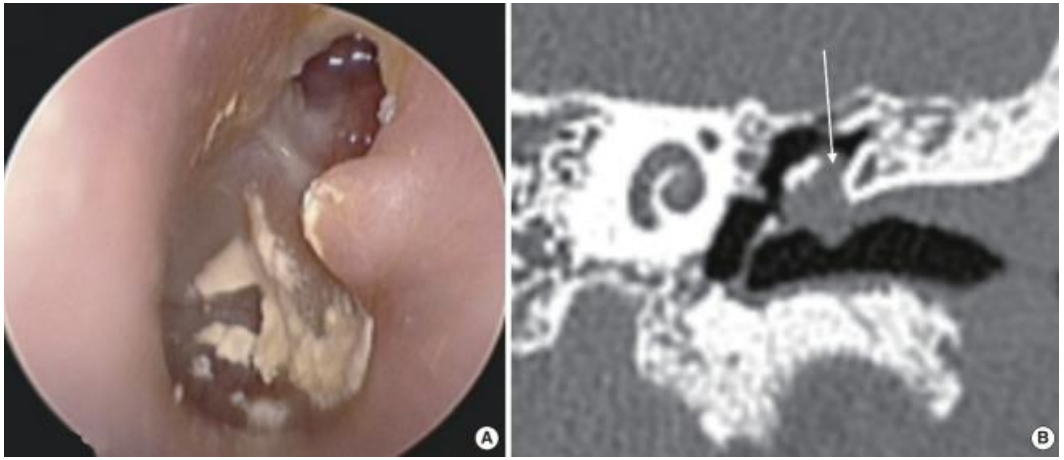

Updates in Pediatric Cholesteatoma Minimizing Intervention While Maximizing Outcomes

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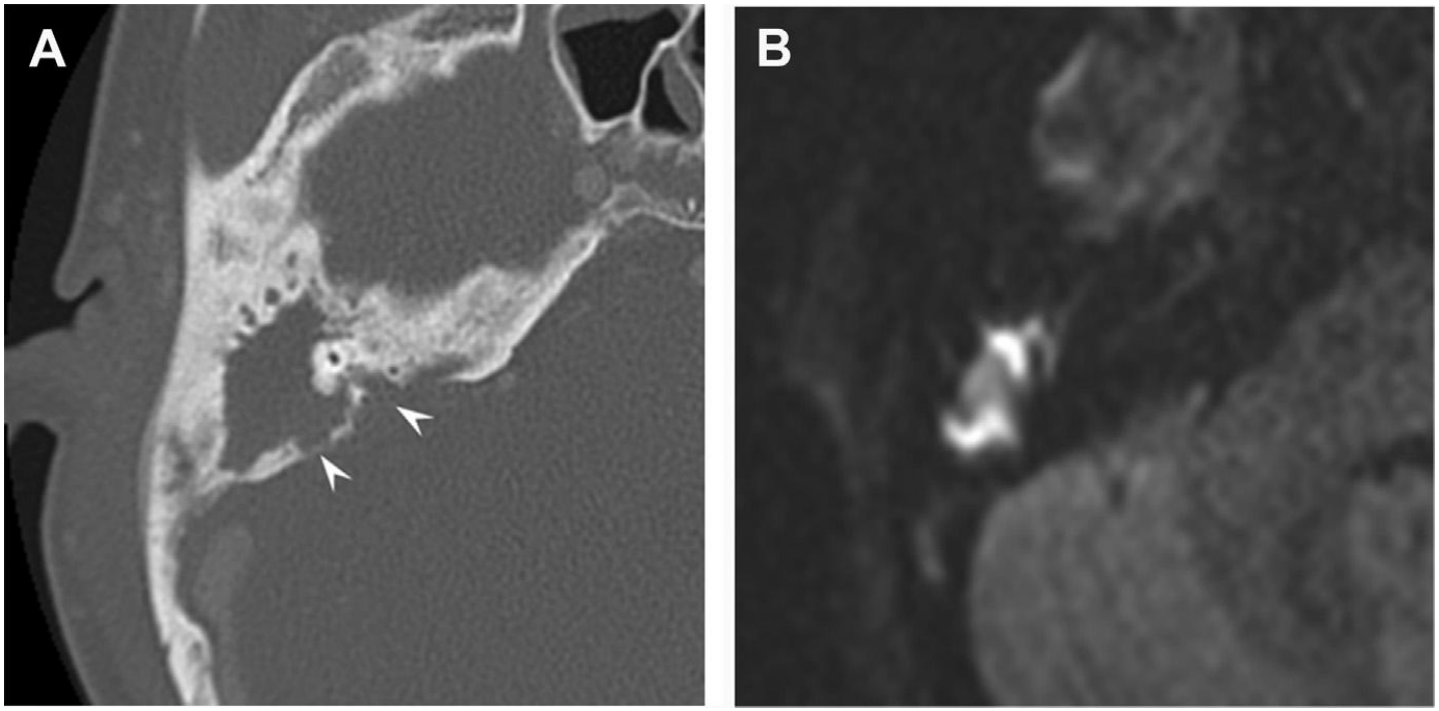
DIFFUSION-WEIGHTED MRI

- CT : ευαισθησία 43% και ειδικότητα 48%
- DWI : μέτρηση κίνησης μορίων νερού στους ιστούς



Egmond S, Stegeman I, Grolman W, et al.

A systematic review of non-echo planar diffusion-weighted magnetic resonance imaging for detection of primary and postoperative cholesteatoma.

Otolaryngol Head Neck Surg 2016;154(2):233–40.

Table 1
Sensitivity, specificity, positive predictive value, and negative predictive value of cholesteatoma detection with DW MRI

Calculation	All Cases (%)[9]	Primary Cases (%)	Residual/ Recurrence (%)
Sensitivity	43–92	83–100	80–82
Specificity	58–100	50–100	90–100
Positive predictive value	50–100	85–100	96–100
Negative predictive value	64–100	50–100	64–85

Cholesteatomas missed on DWI but found in surgery range in size from 2 to 5 mm.

DISEASE VARIATION

- Αρχόμενο χολοστεάτωμα σε μικρούς θυλάκους εισολκής συχνά δύσκολα ανιχνεύεται απεικονιστικά και μπορεί να οδηγήσει σε υψηλότερο ποσοστό **false-negative results.**

- Η απεικόνιση φαίνεται περισσότερο χρήσιμη για ασθενείς που υποβλήθηκαν σε canal wall up (CWU) mastoidectomy.

- Η μεγάλη καθυστέρηση [έως 527 ημέρες] μεταξύ MRI & επέμβασης θα μπορούσε να οδηγήσει στη μη εύρεση απεικονιστικά μικρών χολοστεατωμάτων, με αντίκτυπο στους **sensitivity calculations.**

- Ασθενείς με μικρή πιθανότητα υπολειπόμενης νόσου και negative MRIs συχνά δεν συναινούν για μια second look procedure, με αποτέλεσμα bias στην επιλογή των ασθενών και υπερεκτίμηση της positive predictive value.

ECHOPLANAR IMAGING VERSUS (EPI) NON-ECHOPLANAR IMAGING(non-EPI)

- non-EPI DW MRI was able to detect ***smaller lesions*** with ***better spatial resolution*** and ***less artifact*** than EPI DW MRI.

- ***statistically significant sensitivity*** of non-EPI DW MRI in detecting ***residual or recurrent*** cholesteatoma when compared with EPI DW MRI.

1.Jindal M, Riskalla A, Jiang D, et al. A systematic review of diffusion-weighted magnetic resonance imaging in the assessment of postoperative cholesteatoma. Otol Neurotol 2011;32:1243–9.

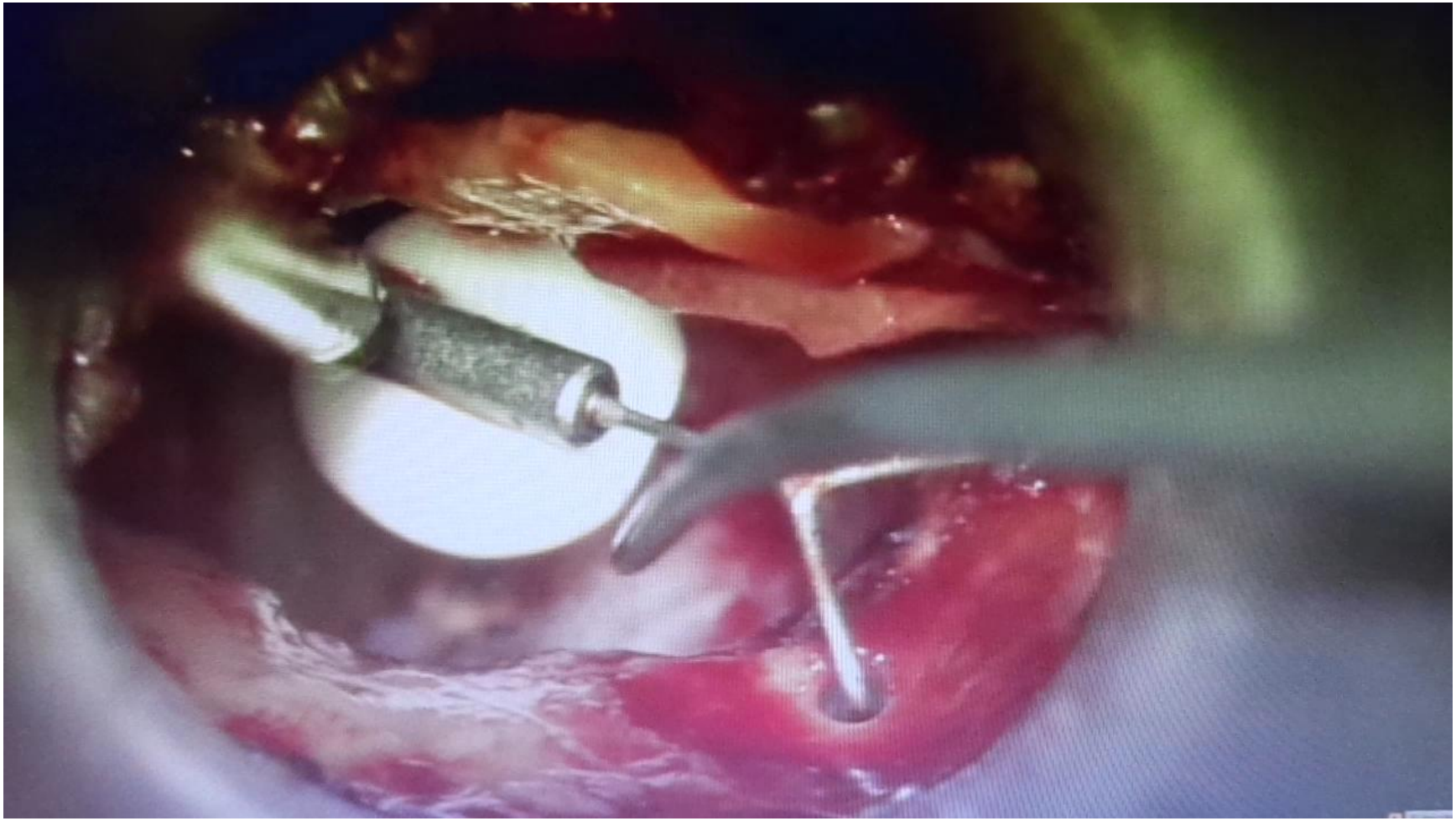
2. Egmond S, Stegeman I, Grolman W, et al. A systematic review of non-echo planar diffusion-weighted magnetic resonance imaging for detection of primary and postoperative cholesteatoma. Otolaryngol Head Neck Surg 2016;154(2):233–40.

3. Muzaffar J, Colley S, Coulson C. Diffusion-weighted magnetic resonance imaging for residual and recurrent cholesteatoma: a systematic review and meta-analysis. Clin Otolaryngol 2017;42(3):536–43.

CANAL WALL **UP** *VERSUS* CANAL WALL **DOWN** SURGERY

- Several studies have demonstrated successful management of children after CWU procedures with recidivism rates ranging from 8% to 53%.
- the rates of recurrence or residual disease between CWU and CWD procedures are equivocal.
- With CWU surgery, there are a wider variety of hearing rehabilitation options…significantly better audiometric outcomes

Ολική οσταριοπλαστική !!

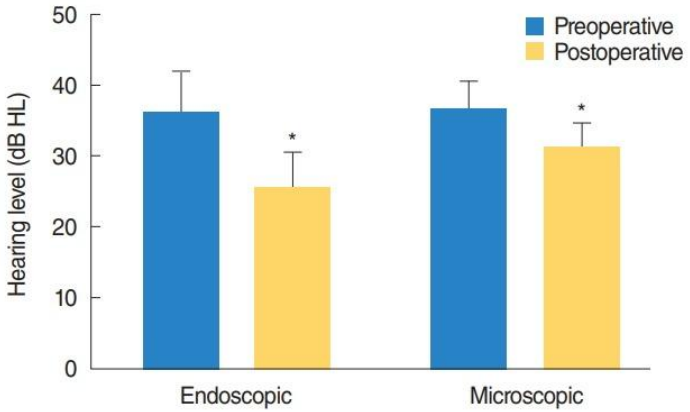


CWD

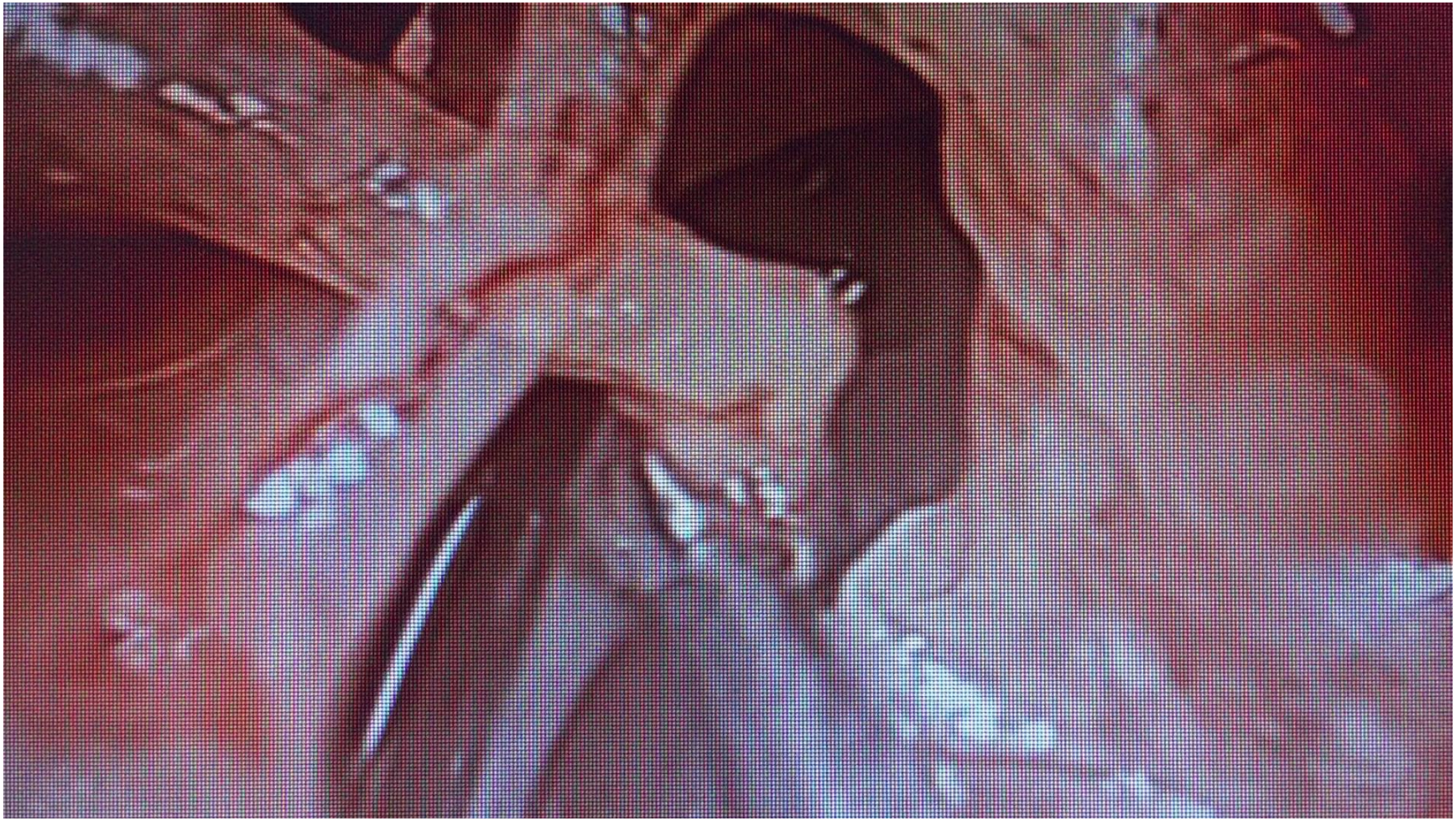
- Sometimes it cannot be avoided owing to the extent of disease, location, and structures involved
- One such alternative is obliteration of the mastoid cavity after CWD surgery (hybrid technique)
- a *canal wall window*, which is a slit in the posterior canal wall

ENDOSCOPIC EAR SURGERY (EES) IN CHOLESTEATOMA SURGERY

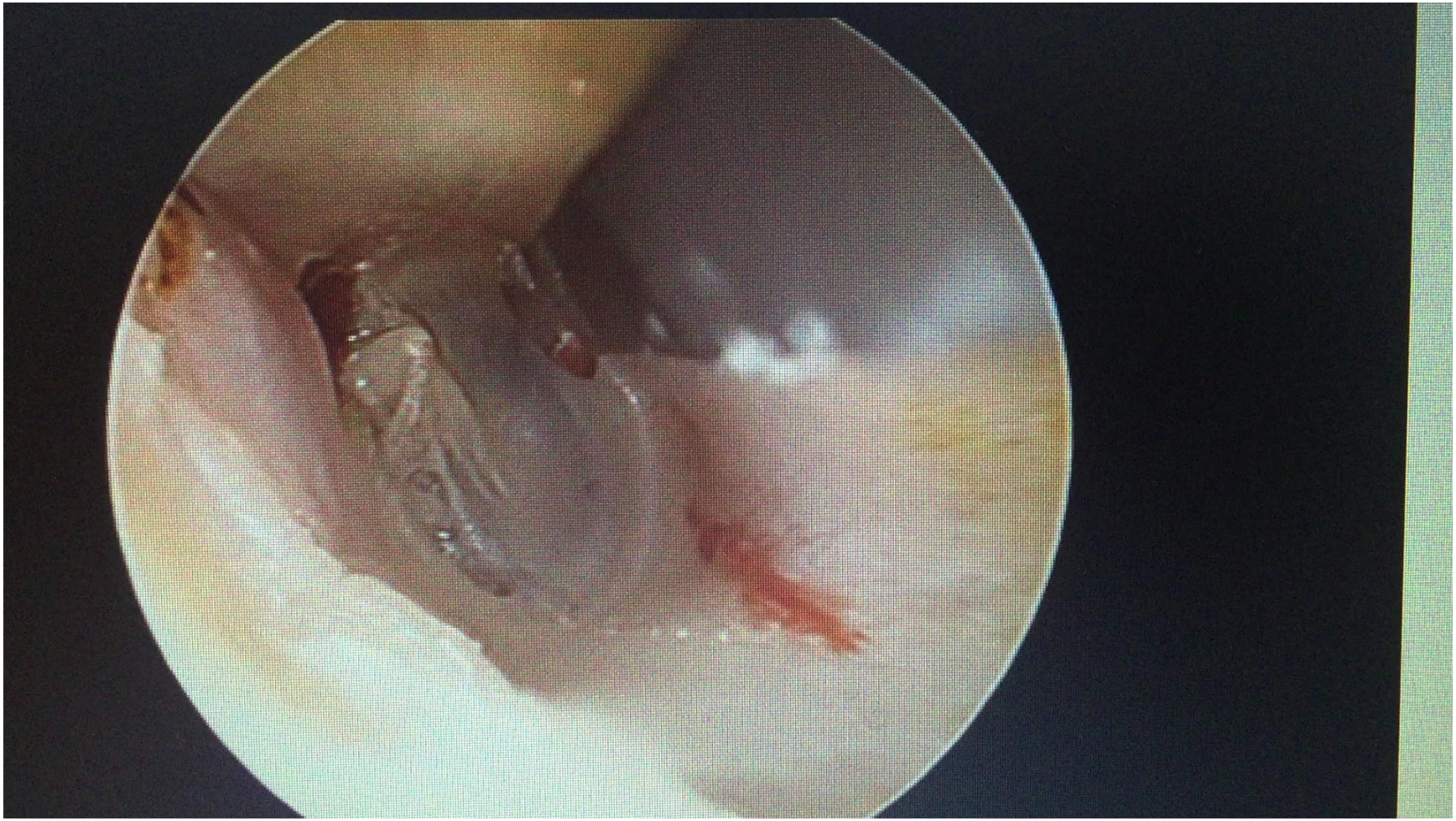
- Γωνιώδη ενδοσκόπια επιτρέπουν καλύτερη εικόνα περιοχών όπως the *facial recess, sinus tympani,* and *epitympanum.*
- *Ενδοσκοπικά ορατό υπολειπόμενο χολοστεάτωμα κυμαίνεται από 16% έως 38% σε ασθενείς που θεωρούνταν microscopically free of disease.*
- *Μια πρόσφατη systematic review in pediatric patients by Han et al κατέγραψε σημαντικά μικρότερα ποσοστά υπολειπόμενου / υποτροπιάζοντος χολοστεατώματος σε EES versus MES.*
- *Η επιτυχία του tympanoplasty graft and audiological outcomes φαίνονται Ισοδύναμα ανάμεσα στις 2 τεχνικές.*



Γωνιώδη Ενδοσκόπια… Λιγότερο Drilling!!



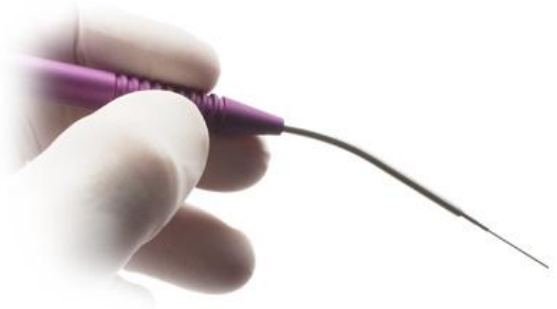
EES Video … Removing Cholesteatoma

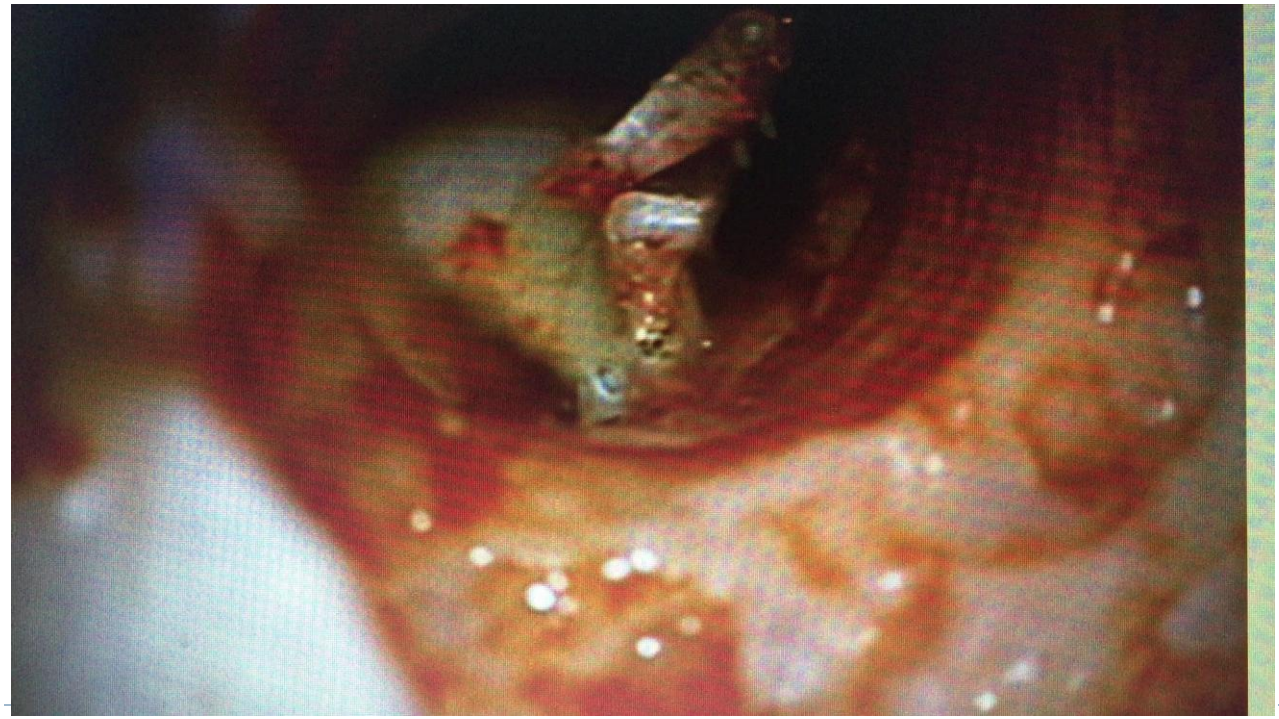


EES vs MES

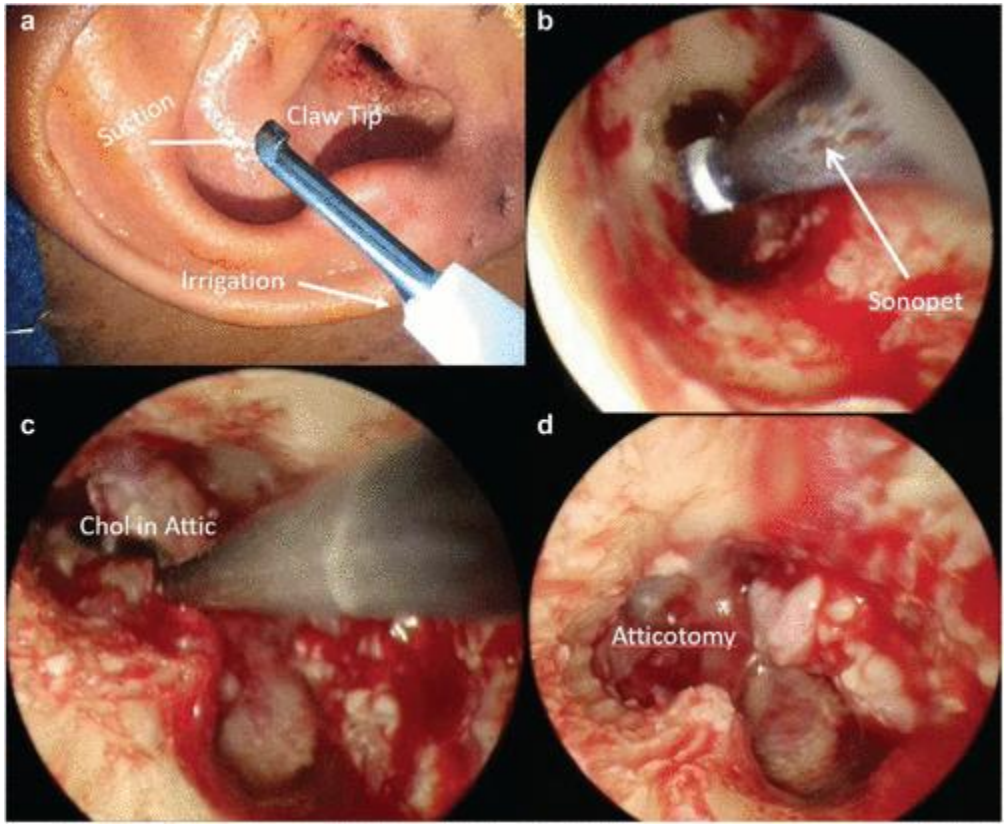
- Επιπλοκές λίγες και συγκρίσιμες με την παραδοσιακή MES.
- Συχνά αποφεύγεται η ανάγκη για postauricular incision.
- Αυξημένη πιθανότητα για ossicular chain preservation, γεγονός καταλυτικό για καλύτερα hearing outcomes.
- Στατιστικά σημαντική μείωση ανάγκης εκτέλεσης mastoidectomy during second look procedures.
- λιγότερος postoperative pain και γρηγορότερη healing times
- Η ενσωμάτωση single handpiece instruments (**flexible fiber CO2 laser** and **ultrasonic bone curette)** έχουν ήδη διευρύνει τις ενδείξεις της EES.

Flexible Fiber CO2 Laser

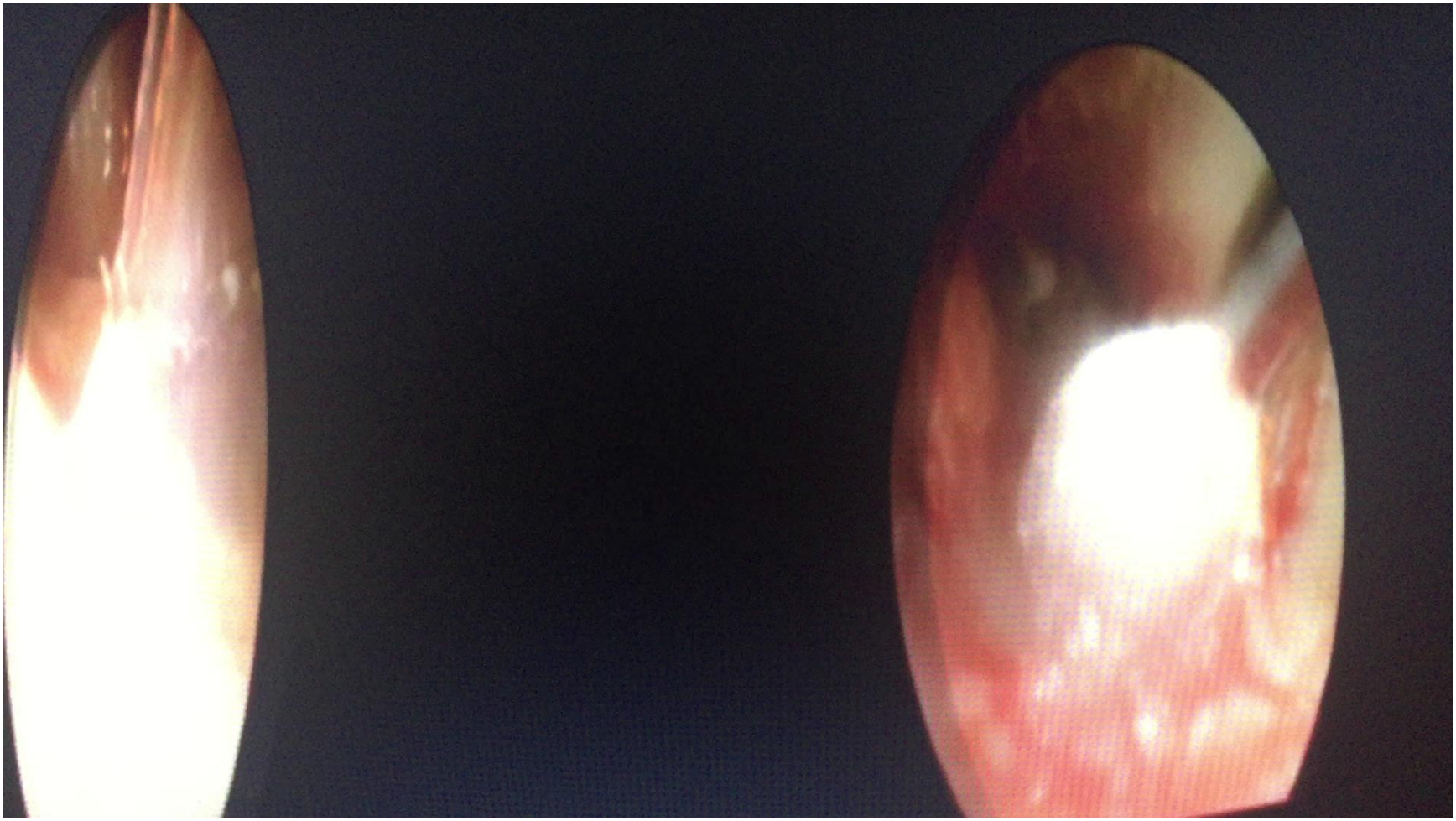




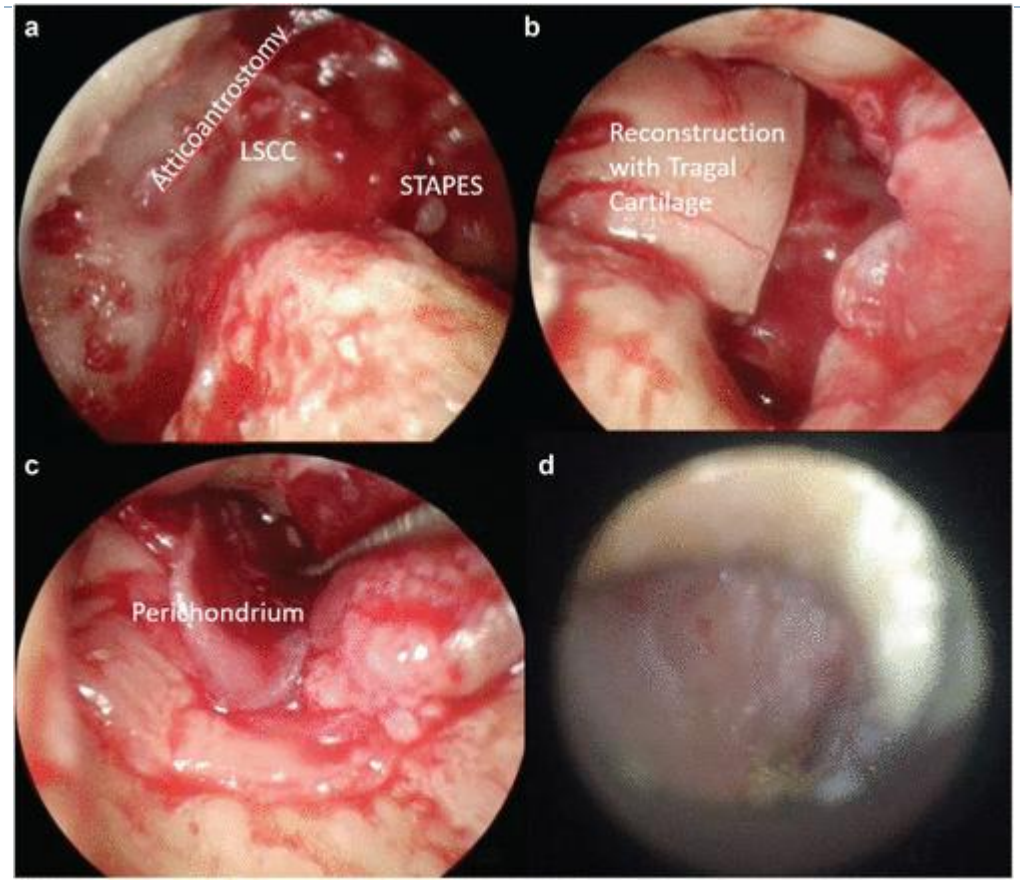
Ultrasonic Bone Curette



Ultrasonic Bone Curette Video



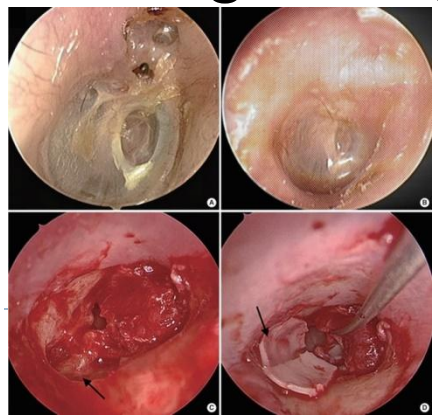
EES



3mm working diameter is the suggested diameter with a 14 to 18cm length

HEARING RECONSTRUCTION: SINGLE STAGE OSSCICULOPLASTY

- hearing outcomes in single stage procedures have been shown to be comparable with those from staged procedures
- staging OCR may be advantageous in severe disease (absence of stapes superstructure or inflamed middle ear mucosa)
- If a reconstructed patient requires an additional operation, however, there is the additional risk of dislodging the prosthesis, resulting in worsening hearing.



Prof. Panetti - Endoscopic / Microscopic Instrument Set for Endoscopic Ear Surgery in the Middle Ear

Any otoendoscopic fogging or blood stains around the tip of the endoscope can be easily removed by rinsing with a hydro-saline solution!

For dissection and suction of the cholesteatoma in the sinus tympani

Suction dissector for sinus tympani,
double curved, backward right, 6 mm

Dissolving and removing of the ear drum

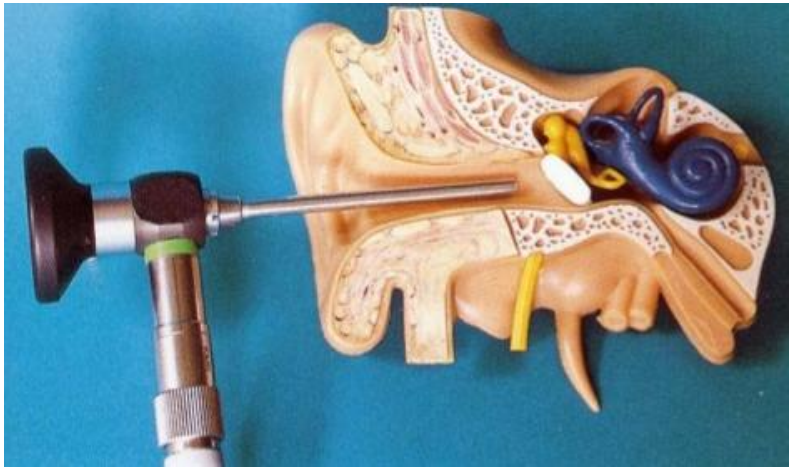
Suction separator, 45°,
suction at the outside, 2.5 mm
Art. No. 10-811-12

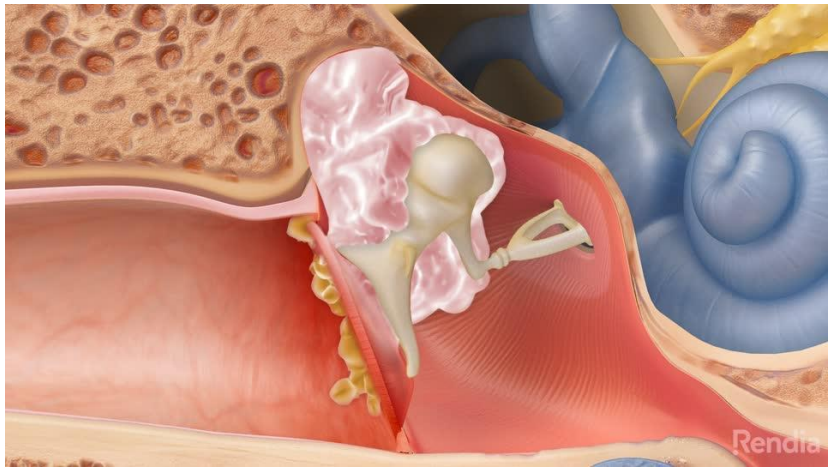
Suction separator, 45°,
suction at the outside, 2.0 mm

Rotatable connecting element to the hose

SUMMARY

- less invasive procedure while maintaining effectiveness
- DW MRI differentiates disease from the surrounding soft tissue to an accuracy of 2 to 4 mm
- otoendoscopy is a growing technology that provides visualization of previously difficult to see areas





Ευχαριστώ πολύ για την προσοχή σας!!

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