

HOW TO CLOSE A TYMPANIC MEMBRANE PERFORATION

■ B. FRAYSSE



HO CHI MINH
November 24th-26th, 2019

GOAL OF THE PRÉSENTATION



- Indications
- Technique
- Results
- Complications
- Specific case children

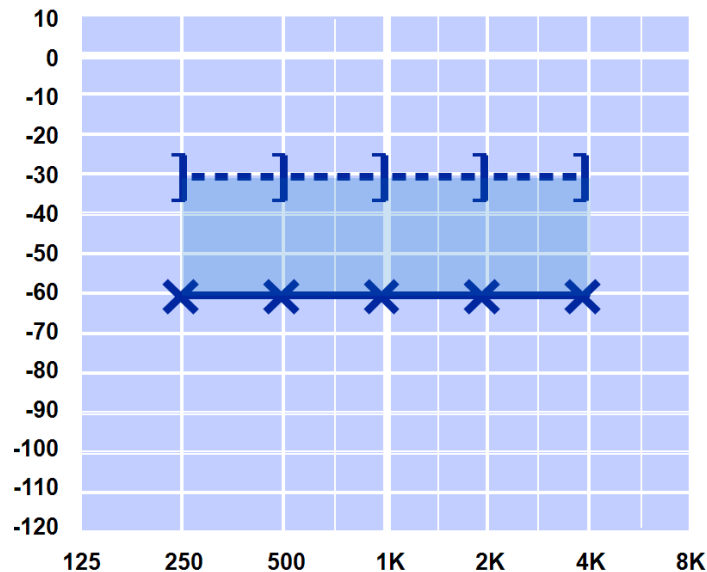
SURGICAL INDICATIONS



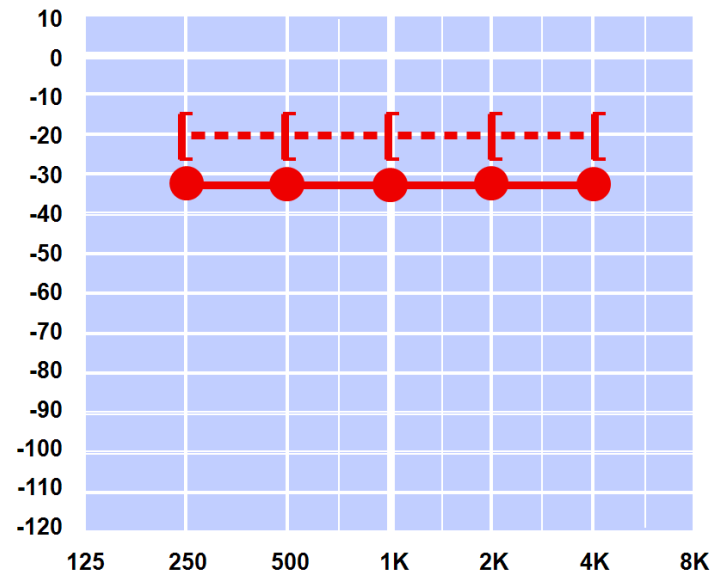
- Surgical indications may be
 - ➔ Anatomical
 - ➔ Functional

FUNCTIONAL INDICATIONS

- Functional benefit depends on the possibility to recover :
 - ① An air conduction within 20 dB
 - ② A symmetrical hearing with a binaural benefit



Operated ear



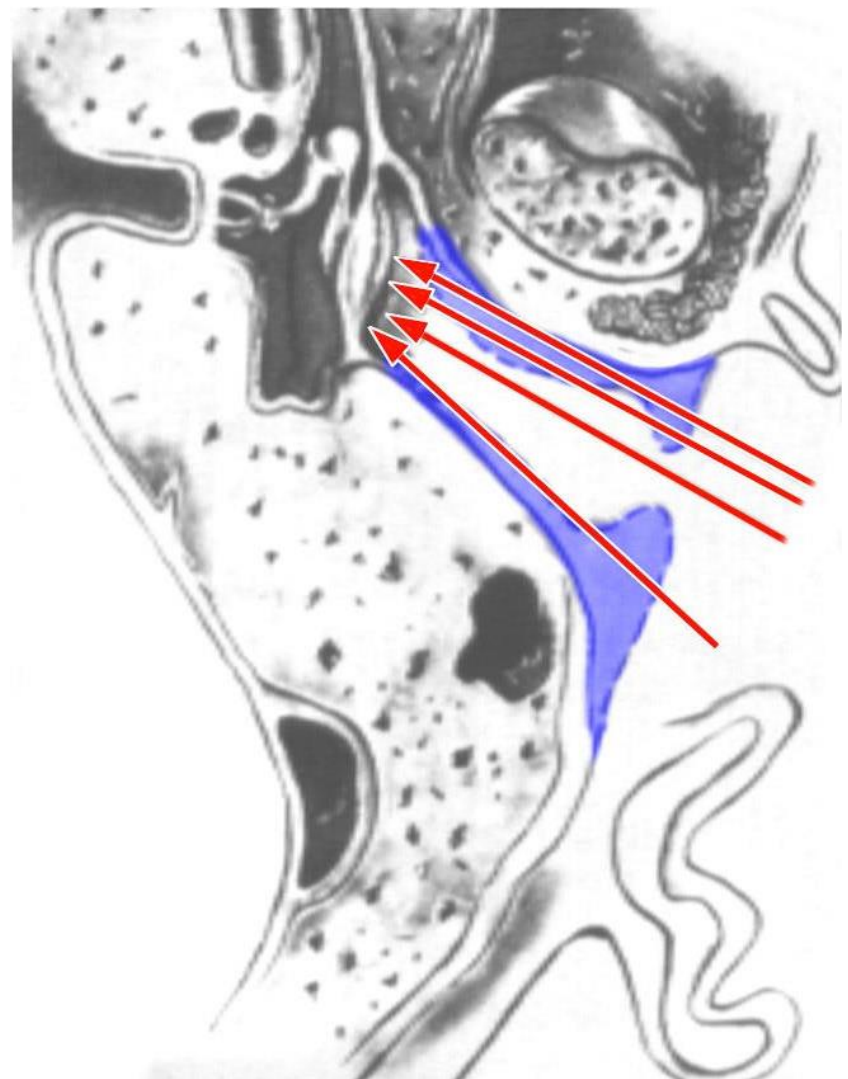
Non-operated ear

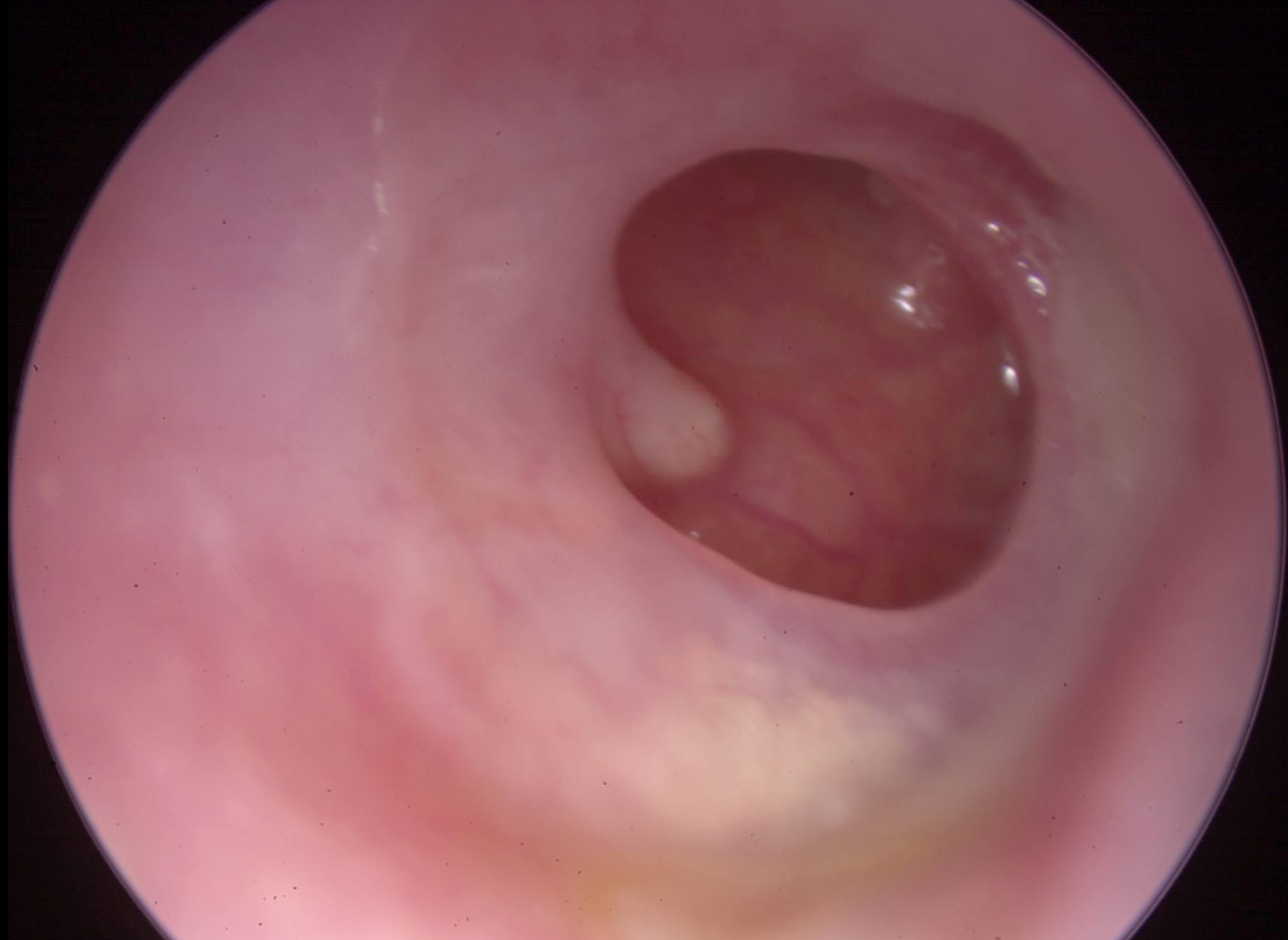
OPERATIVE TECHNIQUE

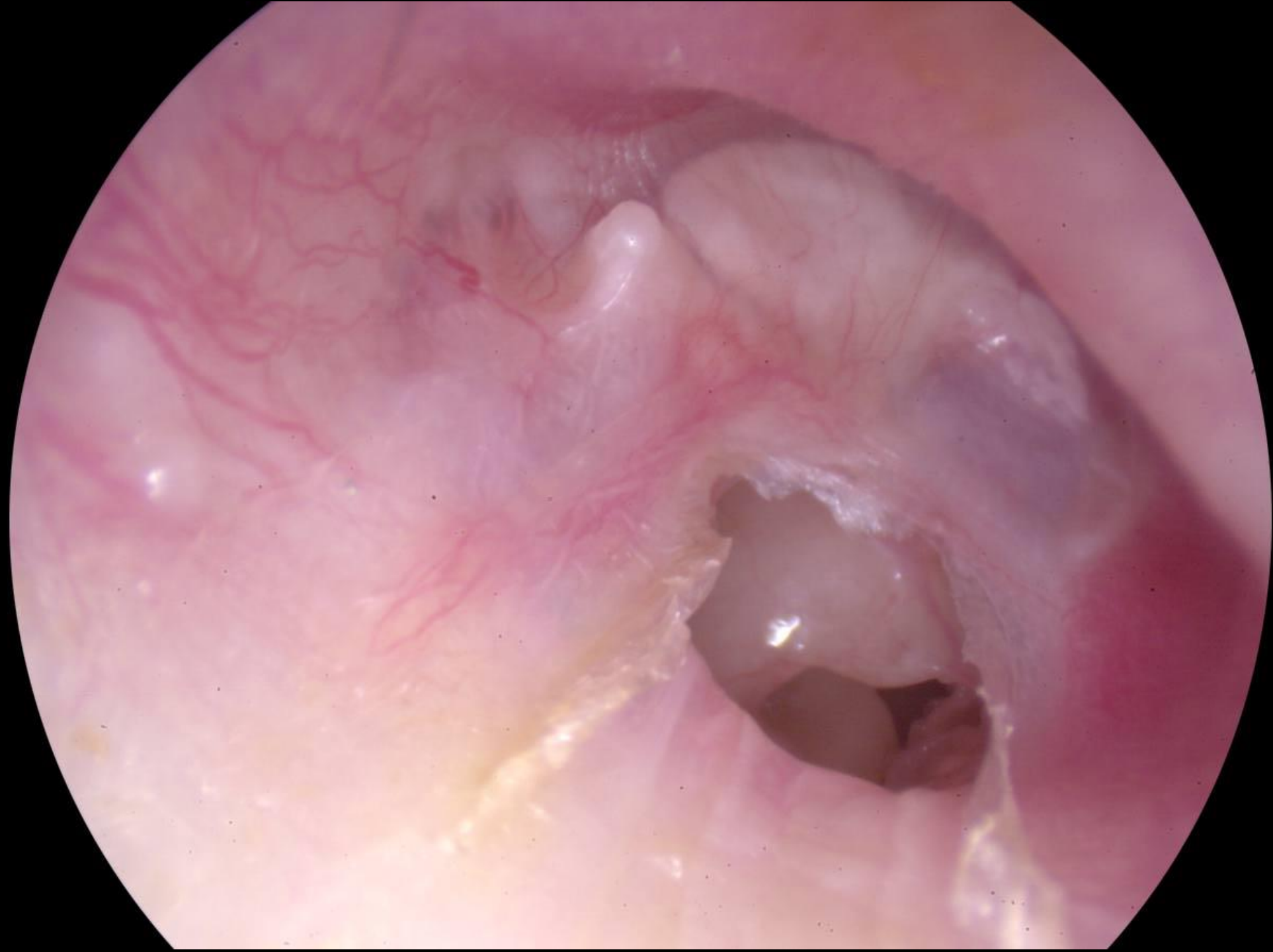


- The choice of operative technique varied according
 - ① The otoscopic examination
 - ② External canal anatomy
 - ③ Mucosal middle ear status
 - ④ Type and site of perforation
- The clinical history (*primary care or surgical revision*)
- The status of the contralateral ear



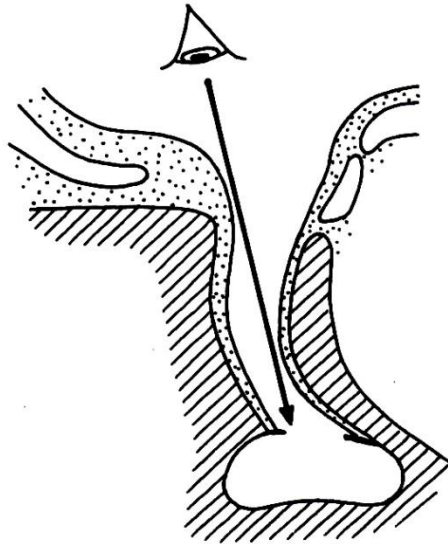




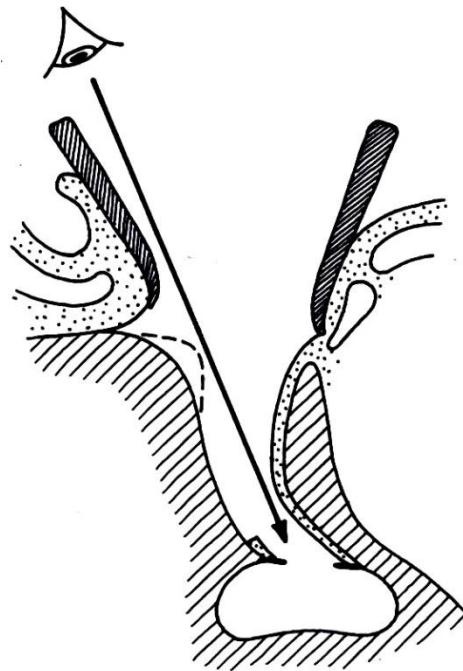


SURGICAL APPROACHES

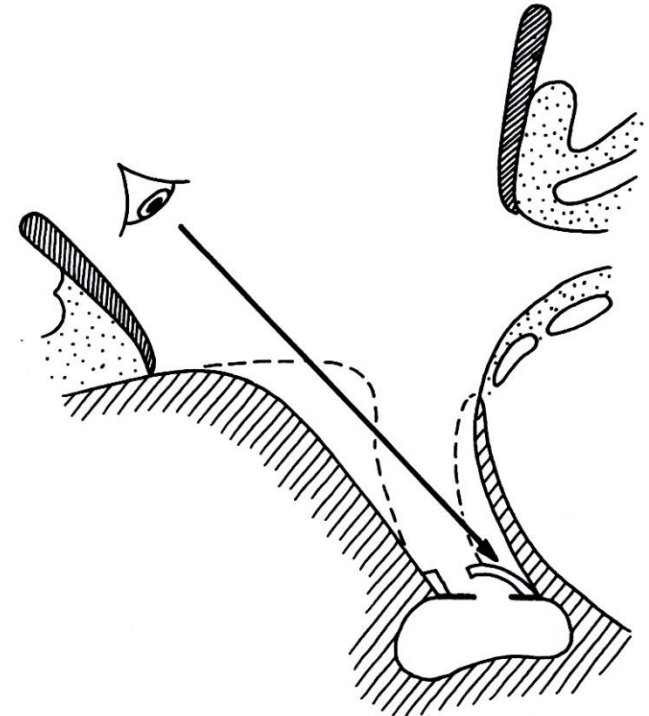
EXTERNAL CANAL



ENDAURAL



RETROAURICULAR

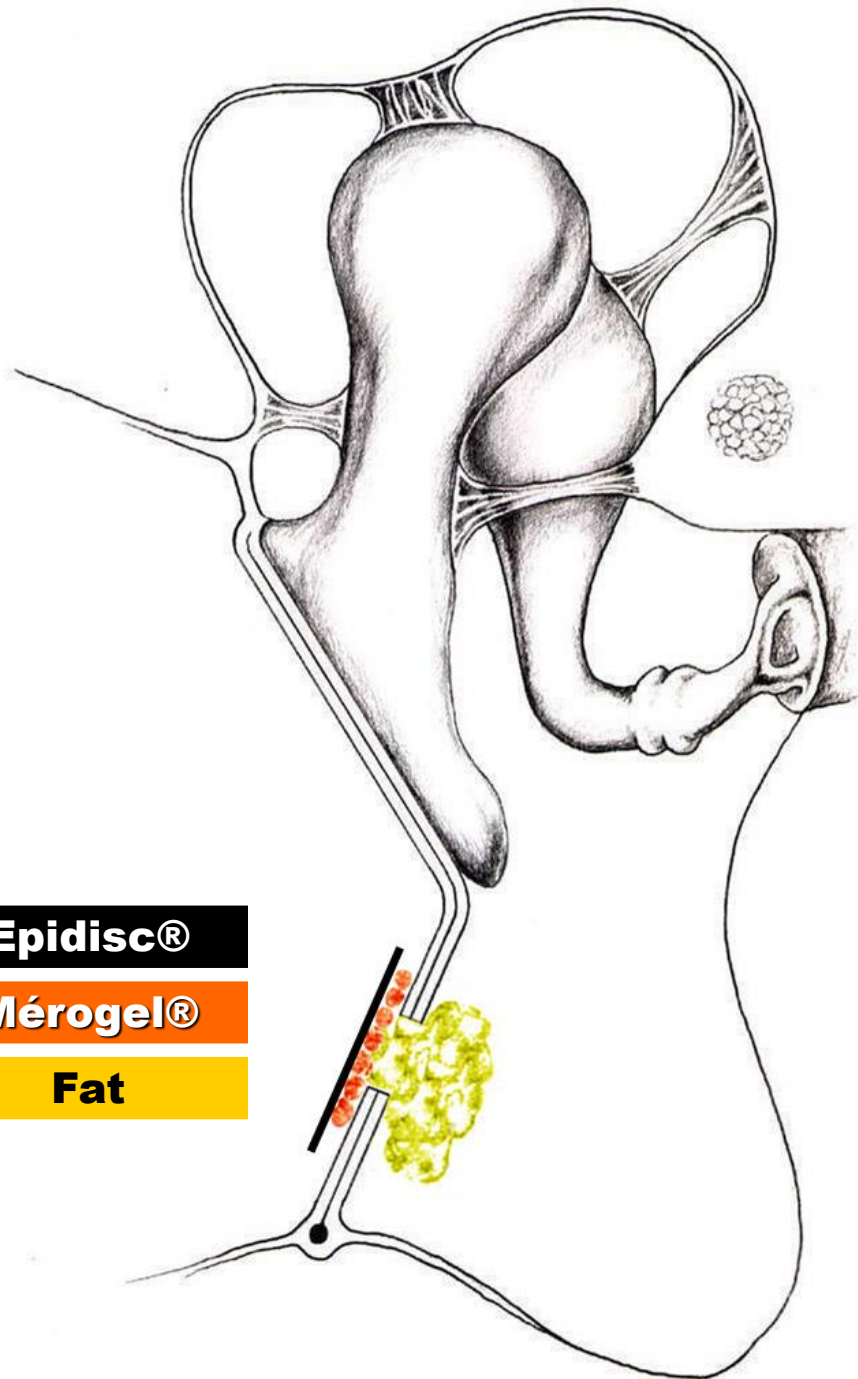


GRAFTING MATERIALS

- Fat
- Temporal fascia
- Cartilage



Epidisc®
Mérogel®
Fat



JFORL

VOLUME 49 / NUMERO 6 / 2000

NOTE TECHNIQUE

INTERÊT DE L'EPIFILM® EN OTOLOGIE *INTEREST OF EPIFILM® IN OTOLOGY*

* SERVICE D'ORL – HÔPITAL PURPAN
CHU DE TOULOUSE
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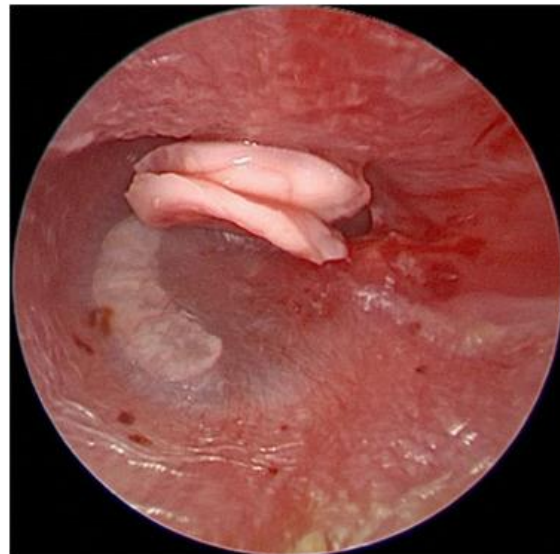
A. NAIM*
B. GARDINI*
Y. SHIN*
O. DEGUINE*
B. FRAYSSE*



Inlay Butterfly Cartilage Tympanoplasty in Children

Couloigner, Vincent; Baculard, Florence; El Bakkouri, Wissame; Viala, Paul; François, Martine; Narcy, P.; Van Den Abbeele, T.

Otology & Neurotology: March 2005 - Volume 26 - Issue 2 - p 247-251
Pediatric Otology & Neurotology



LE CARTILAGE

- Tragus / conca
- Remove fat and muscle
- Perichondre on one face
- Concavity toward the promontary

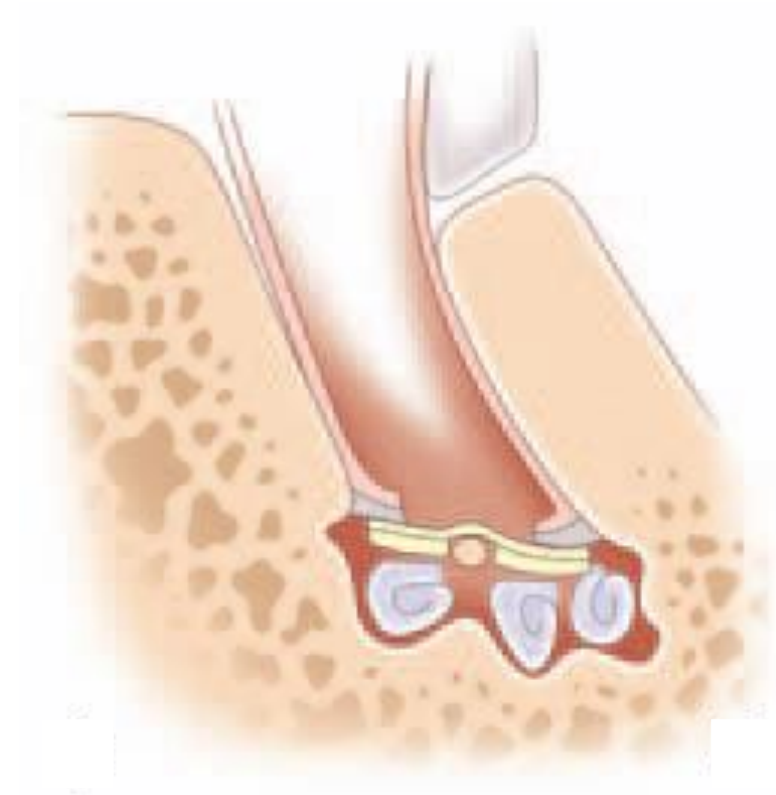
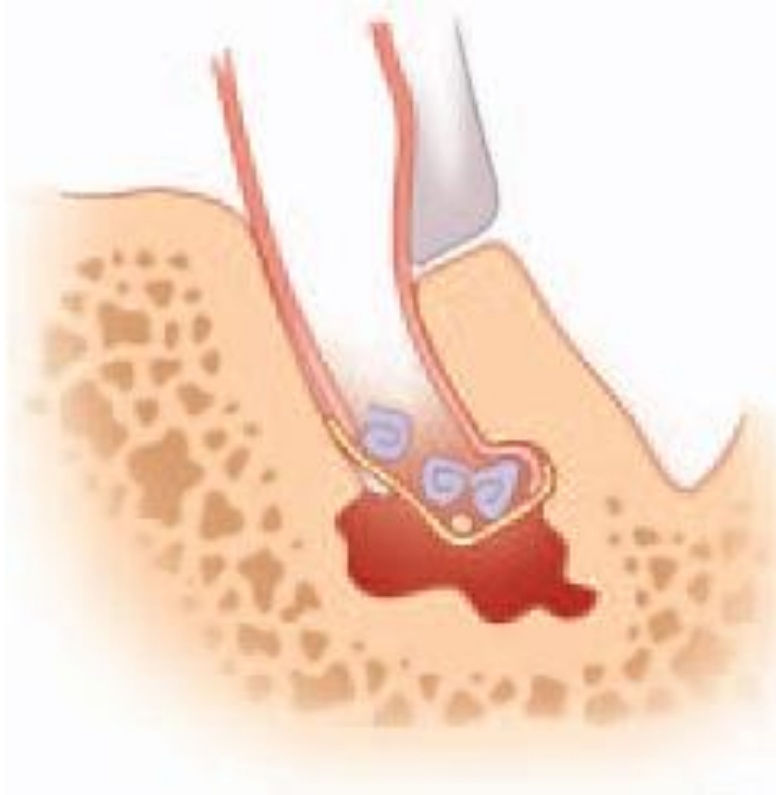




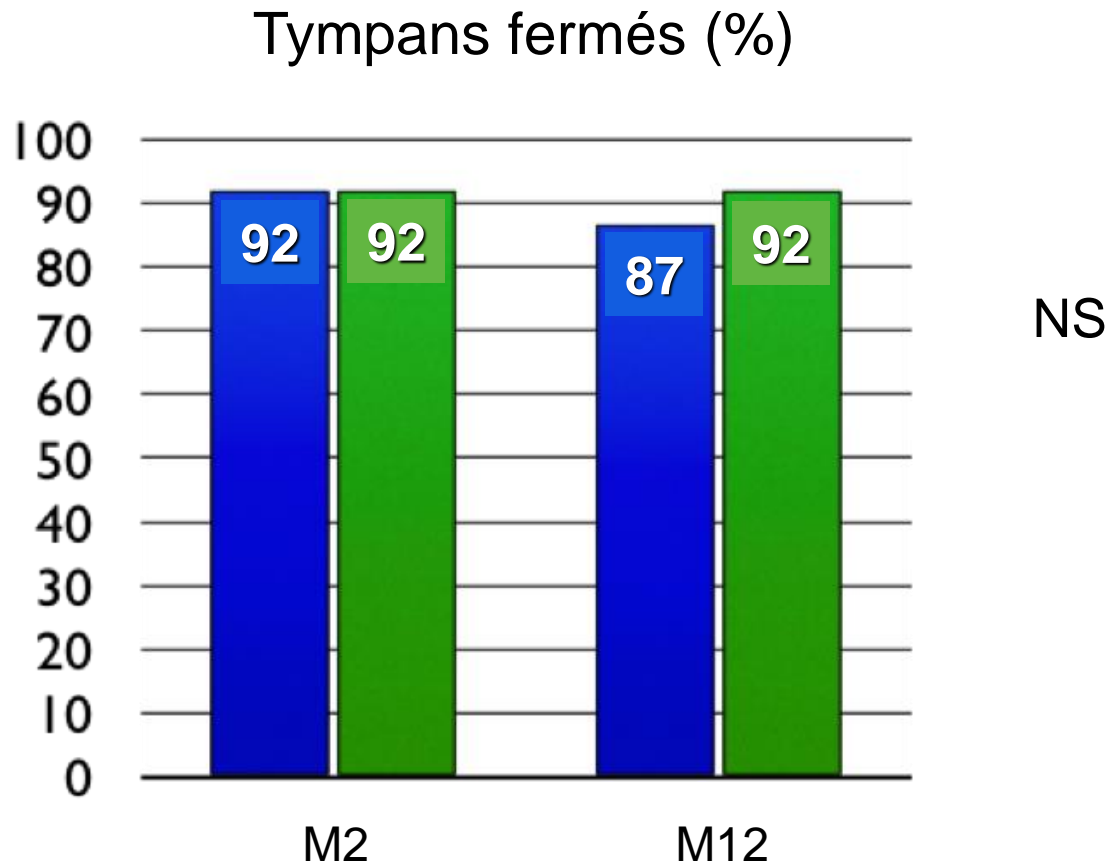
COMPARISON CARTILAGE/FASCIA

128 tympanoplasties Type 1 (2005-2008)

- Aponévrose temporale
- vs
- Cartilage

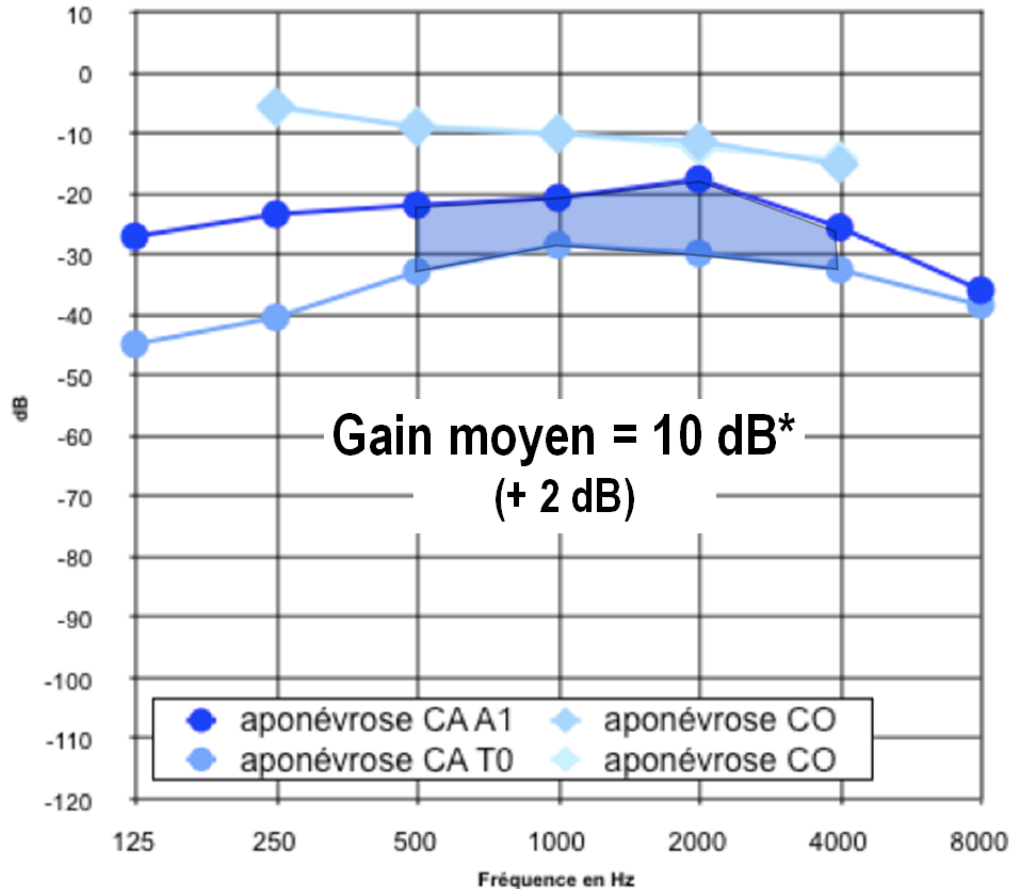


ANATOMICAL RESULTS

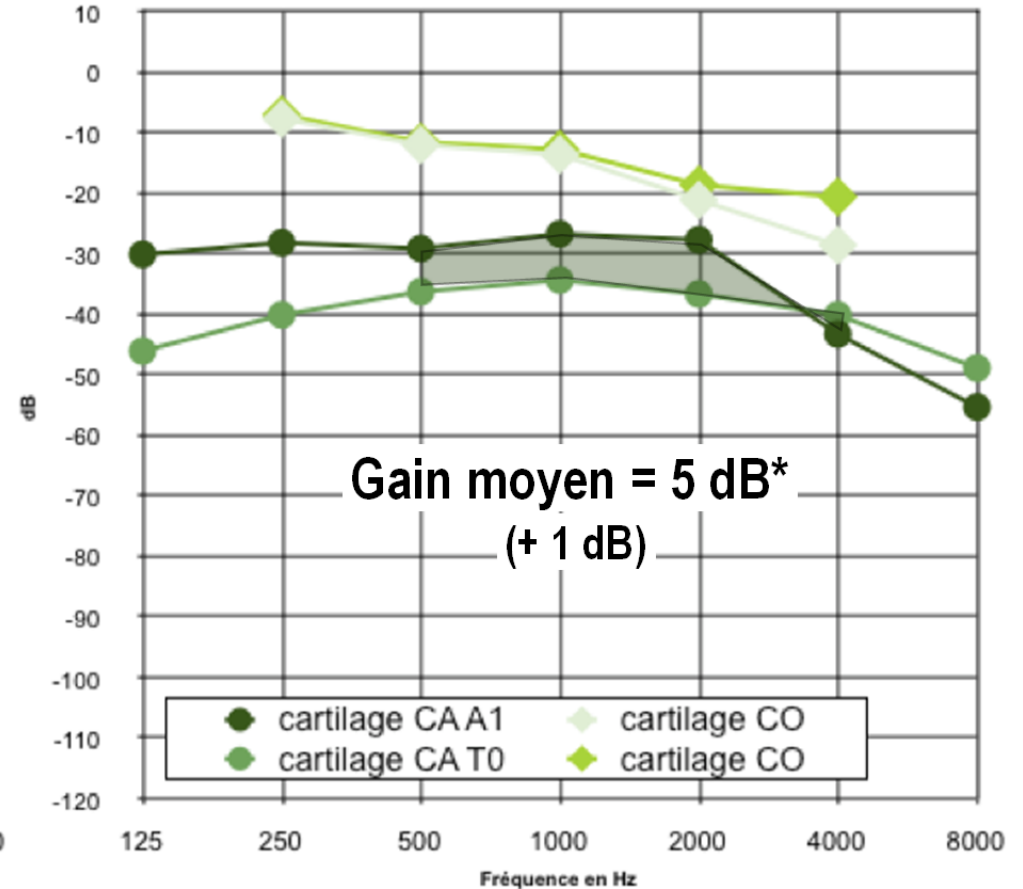


FUNCTIONAL RESULTS AT 12 MONTHS

● Fascia



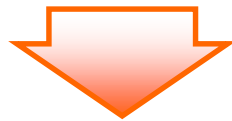
● Cartilage



GRAFT MATERIALS

- Depends on various parameters :

- Dry ear
- Opposite ear normal
- First operation



Fascia

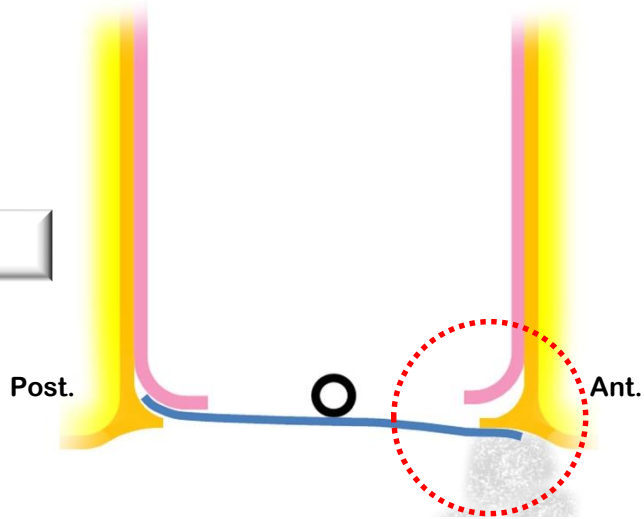
- Inflammatory
- Contralateral retraction
- Second hand



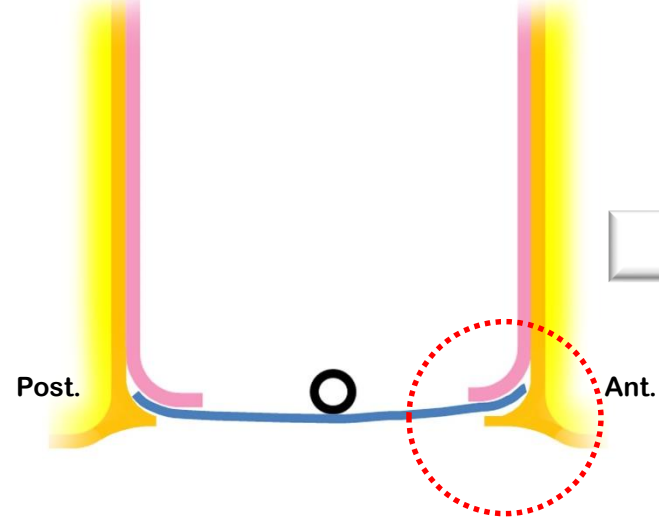
Total Cartilage

GRAFT POSITION

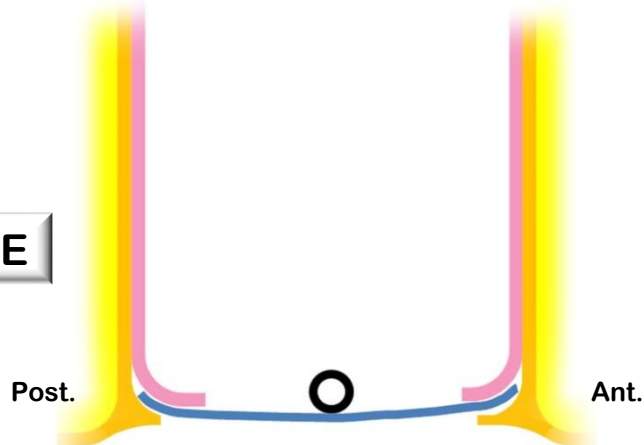
INLAY



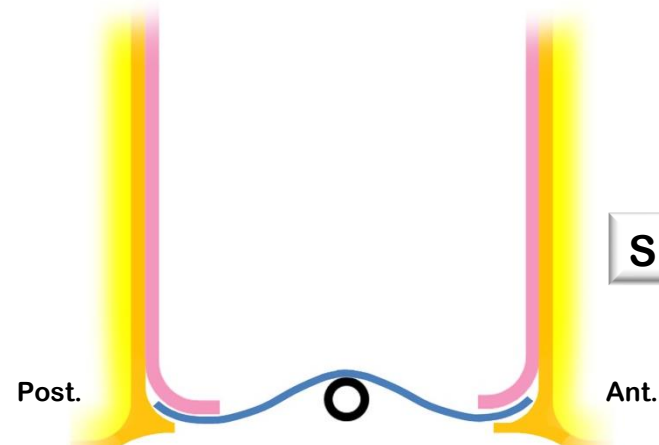
OVERLAY



SOUS LE MANCHE



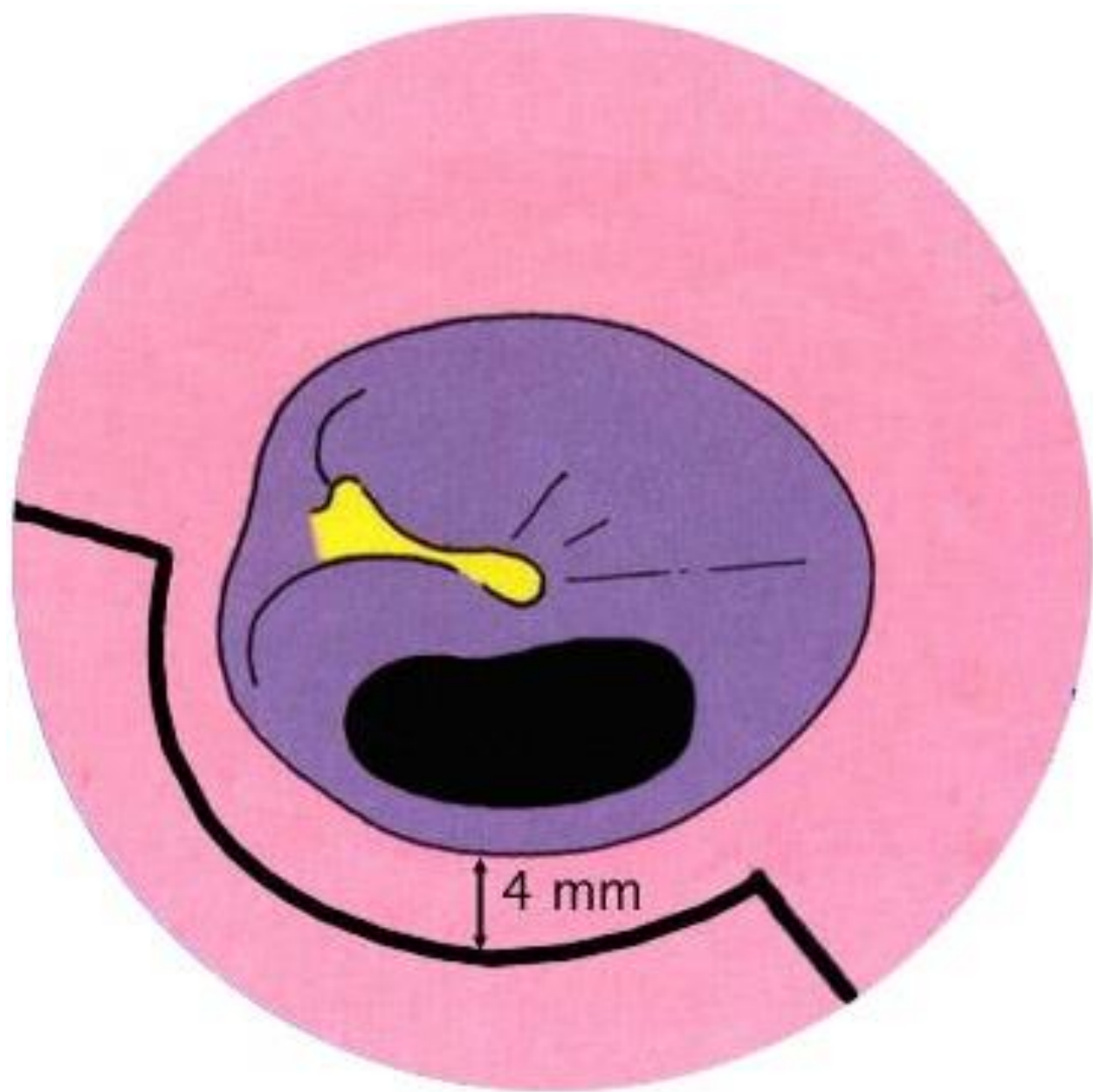
SUR LE MANCHE

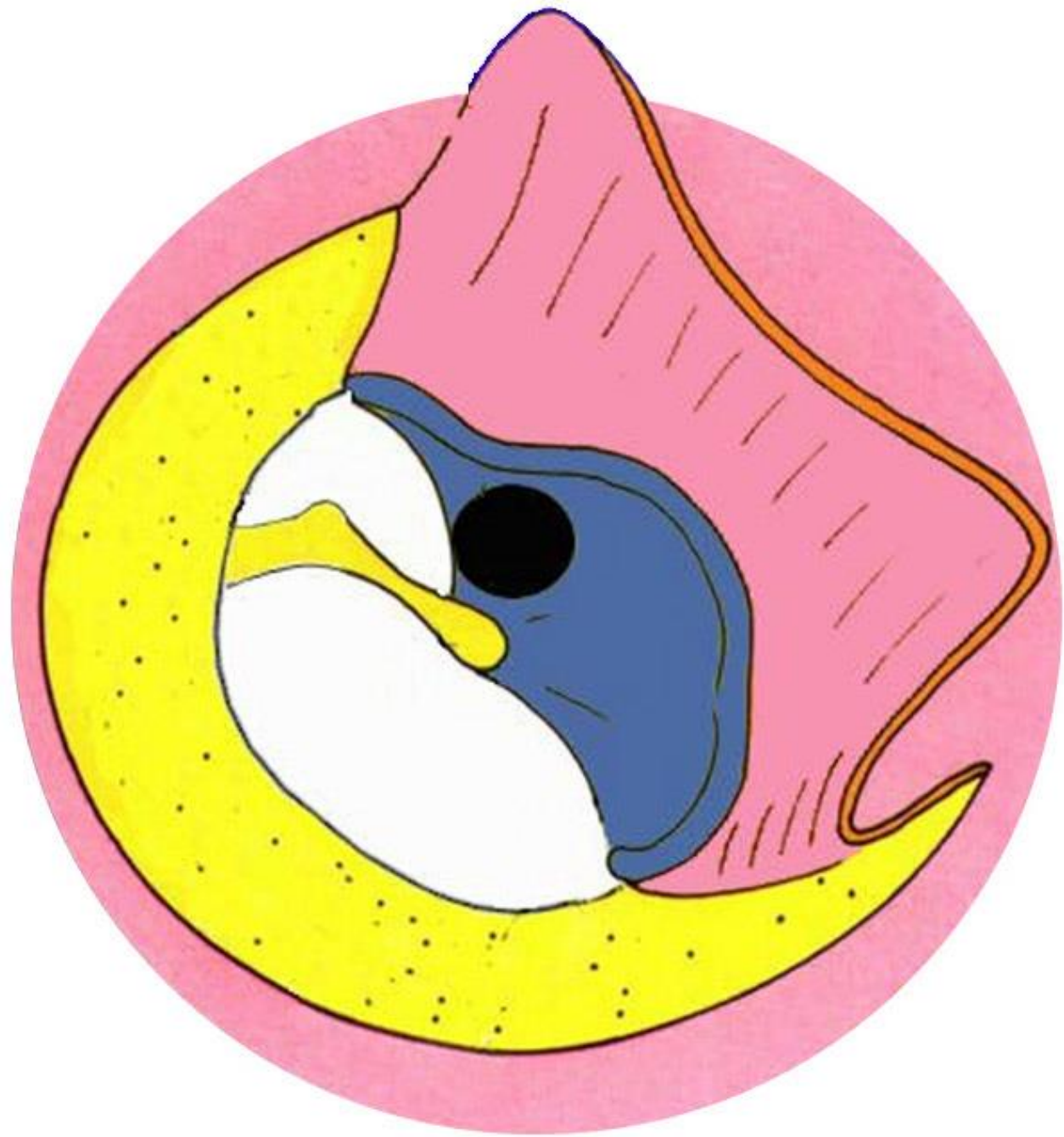


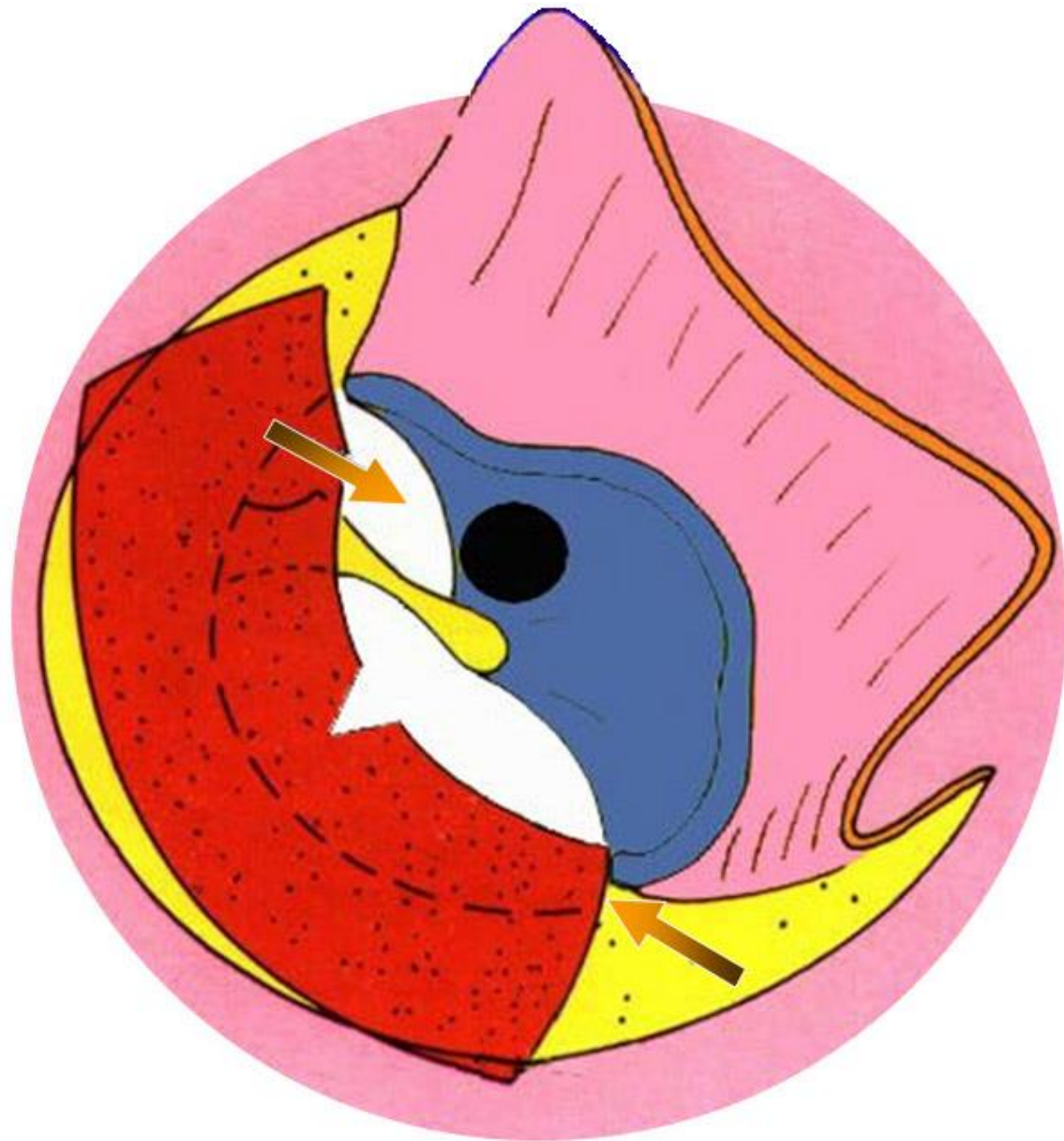
INLAY TECHNIQUE

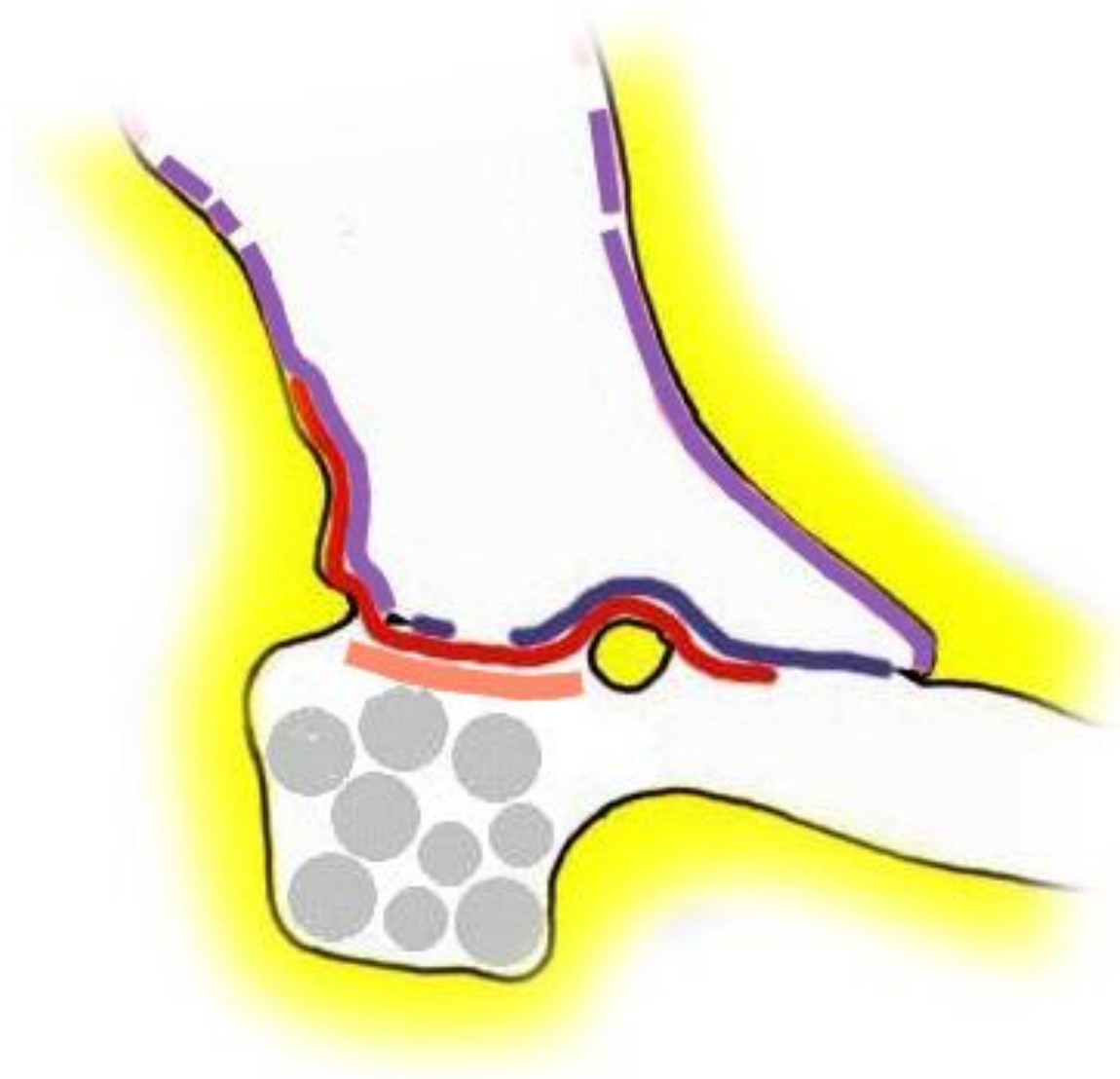


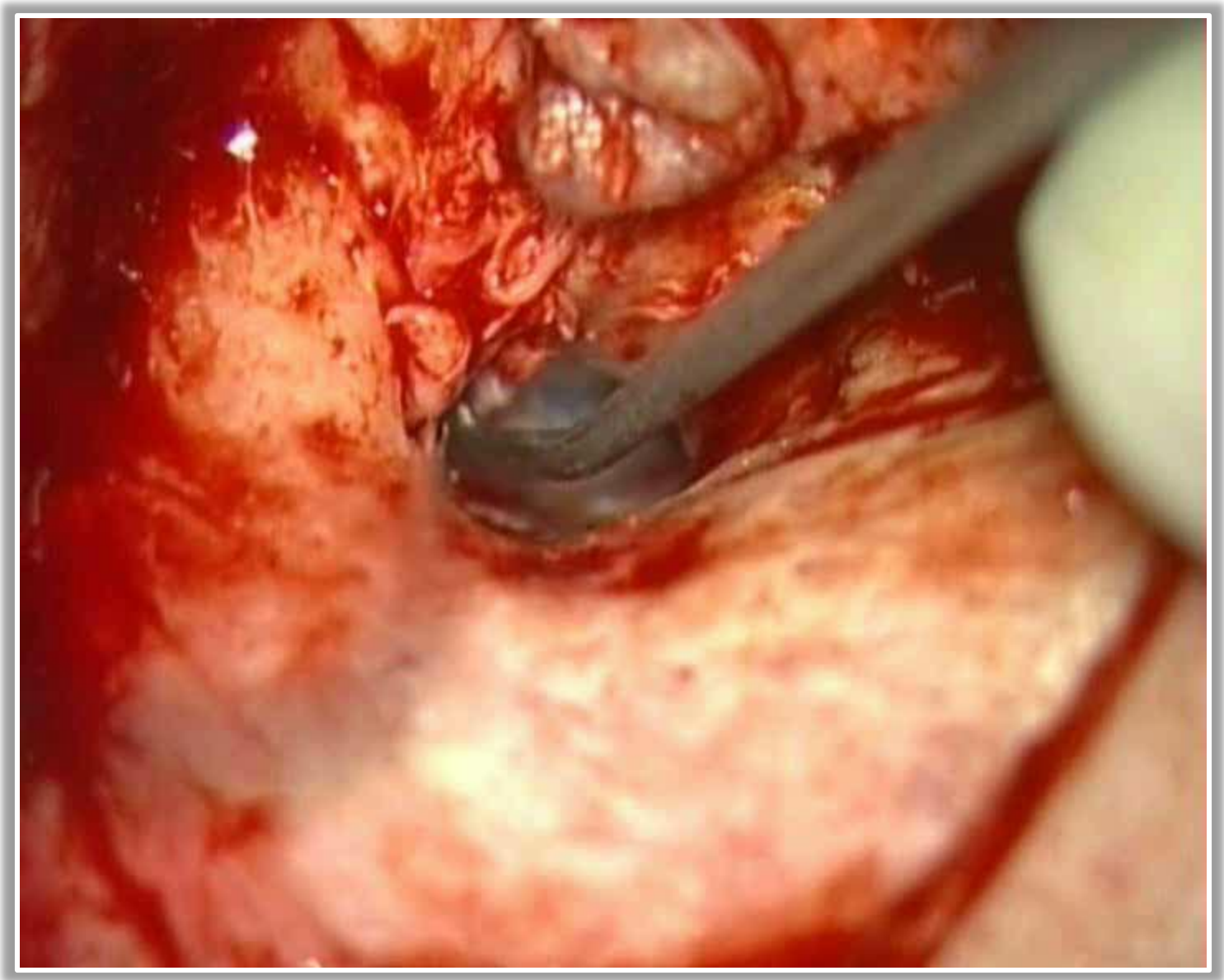








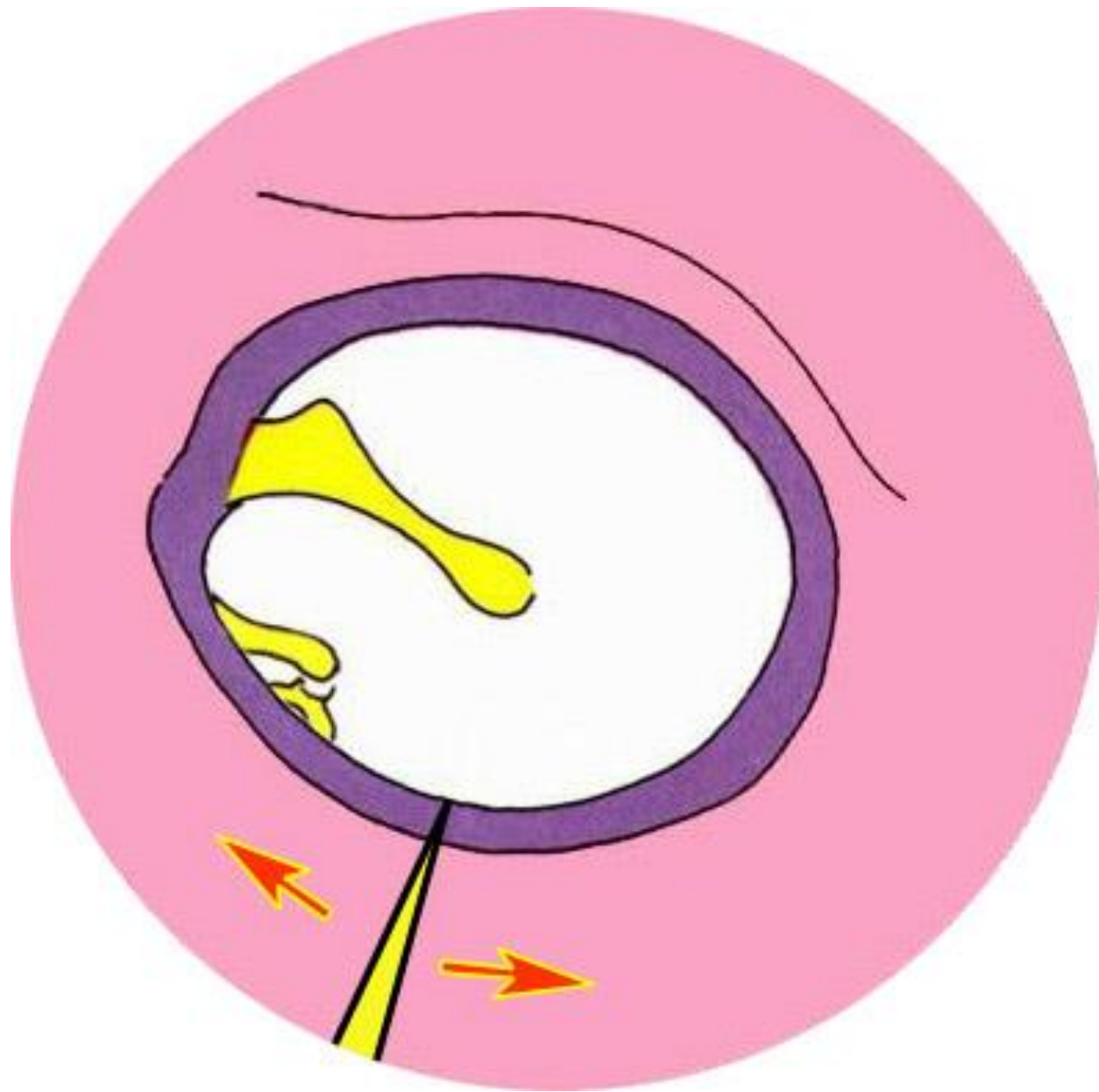


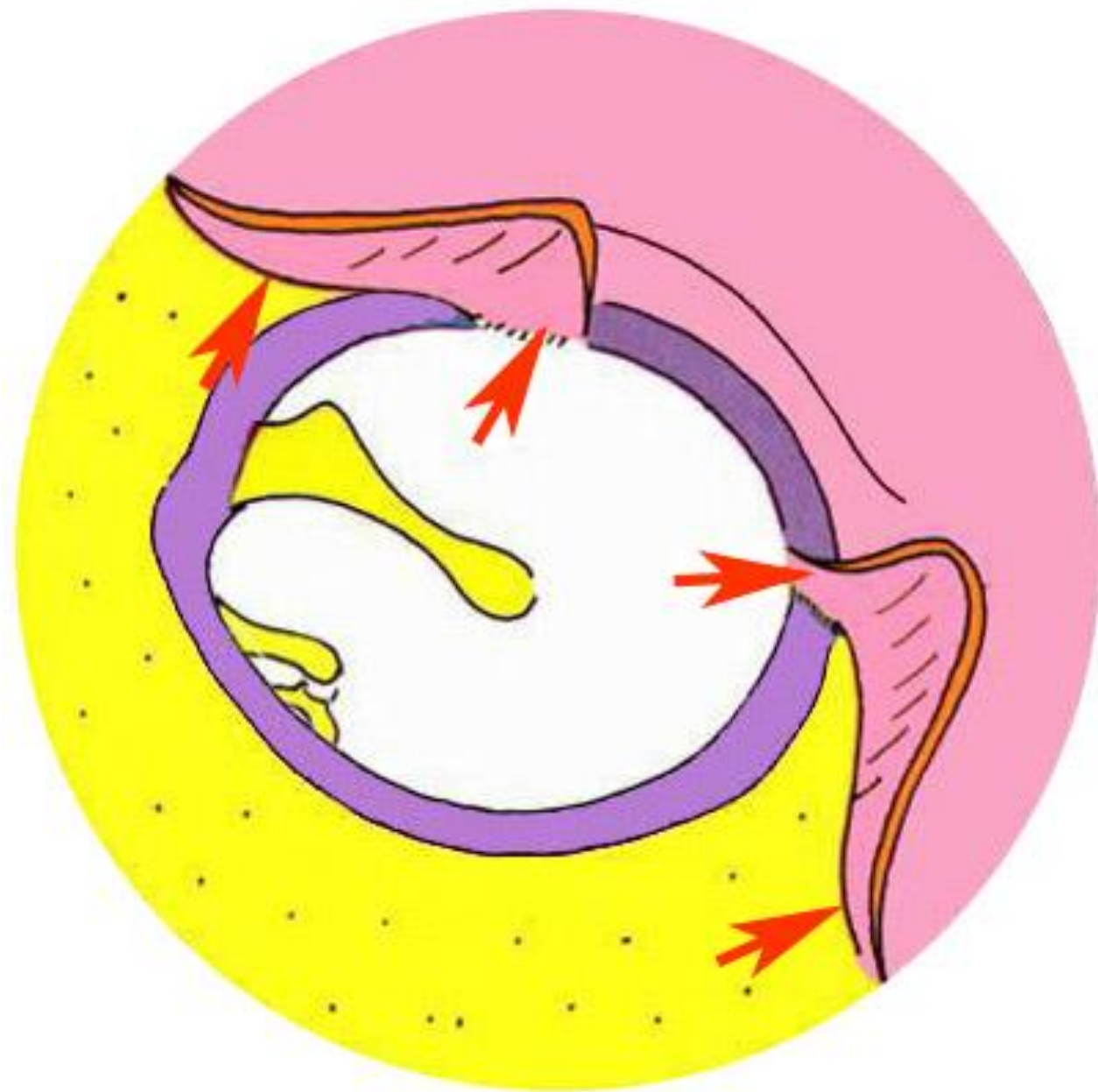


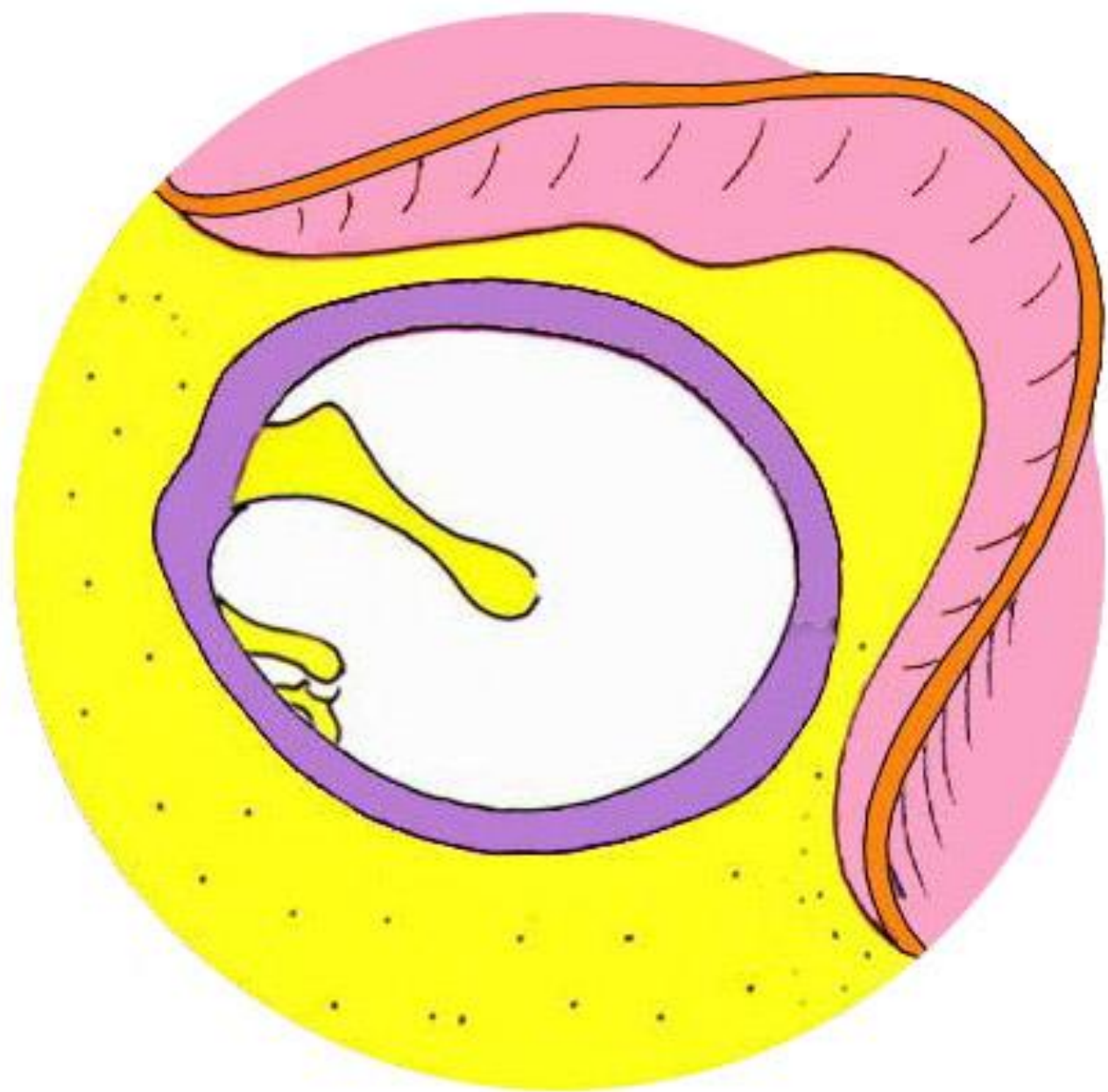
OVERLAY TECHNIQUE

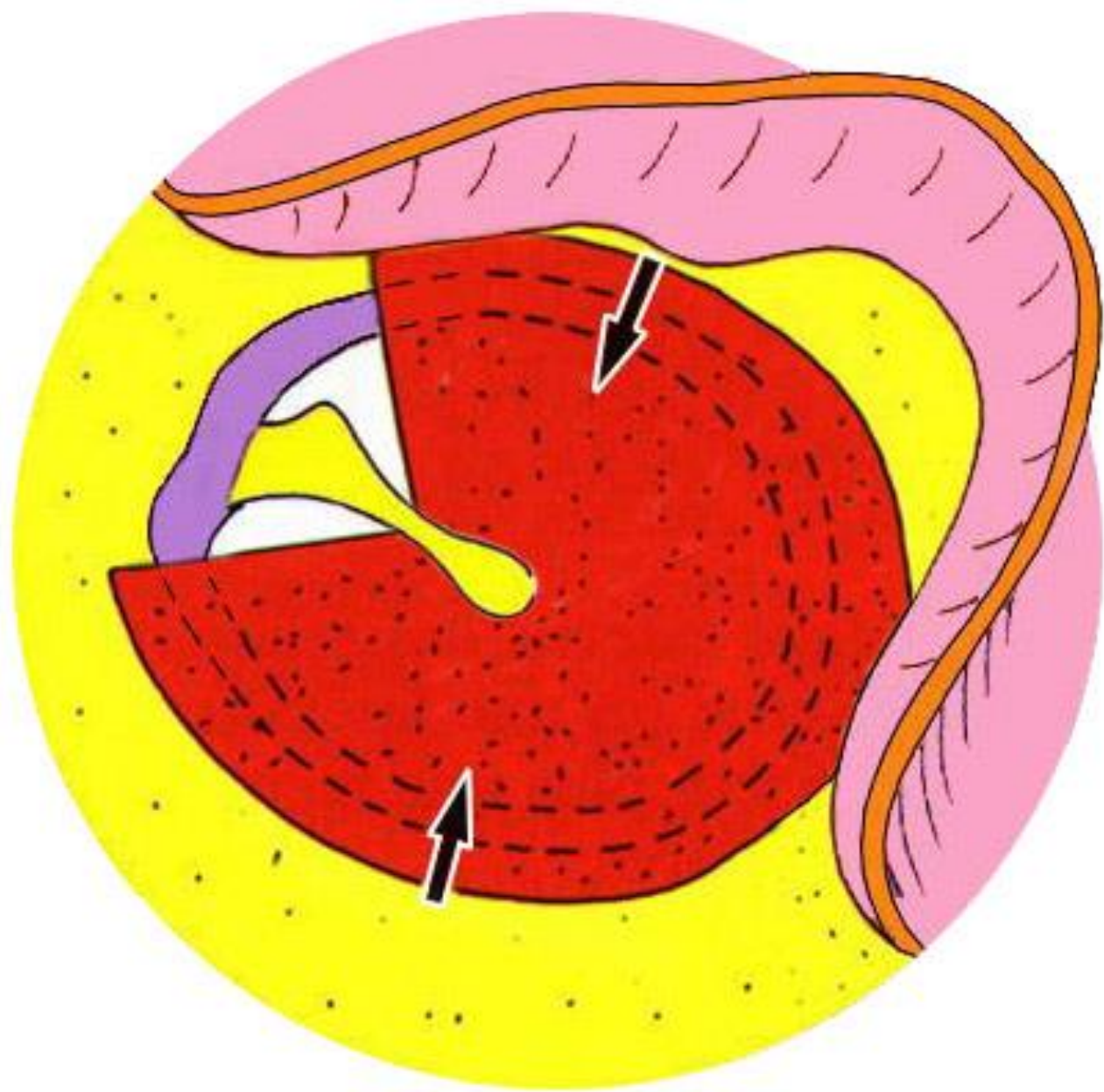


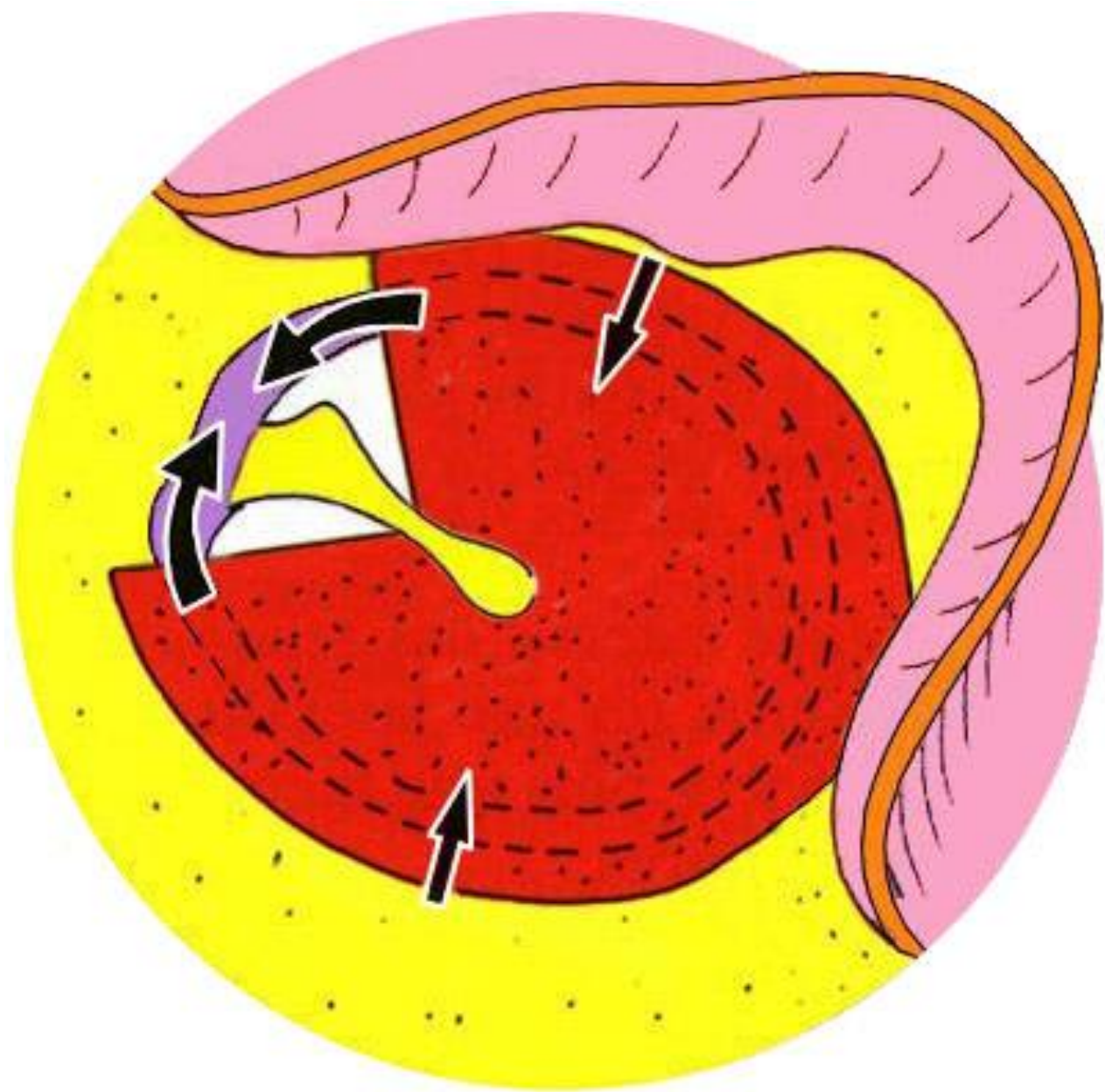
Under the malleus

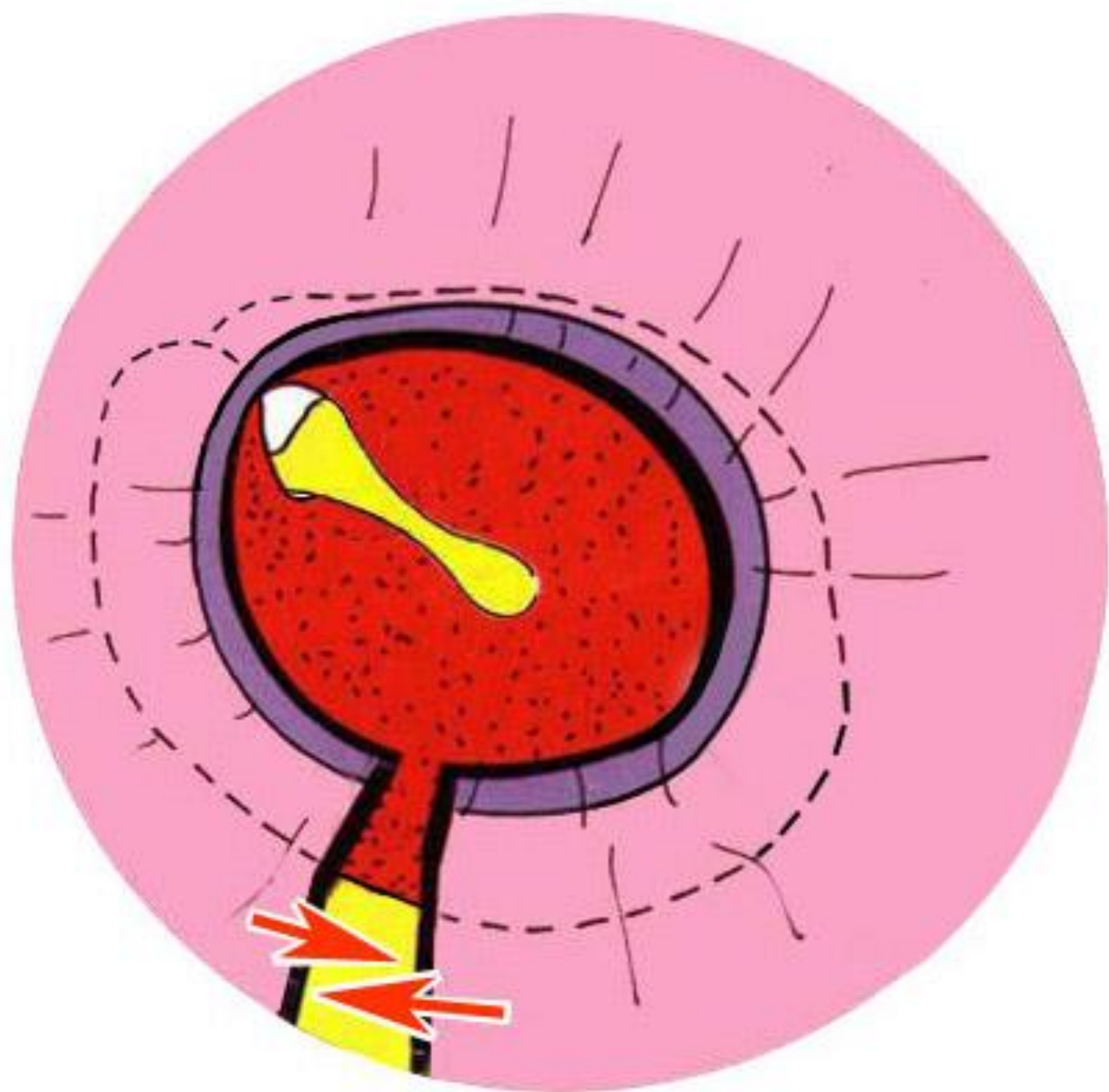


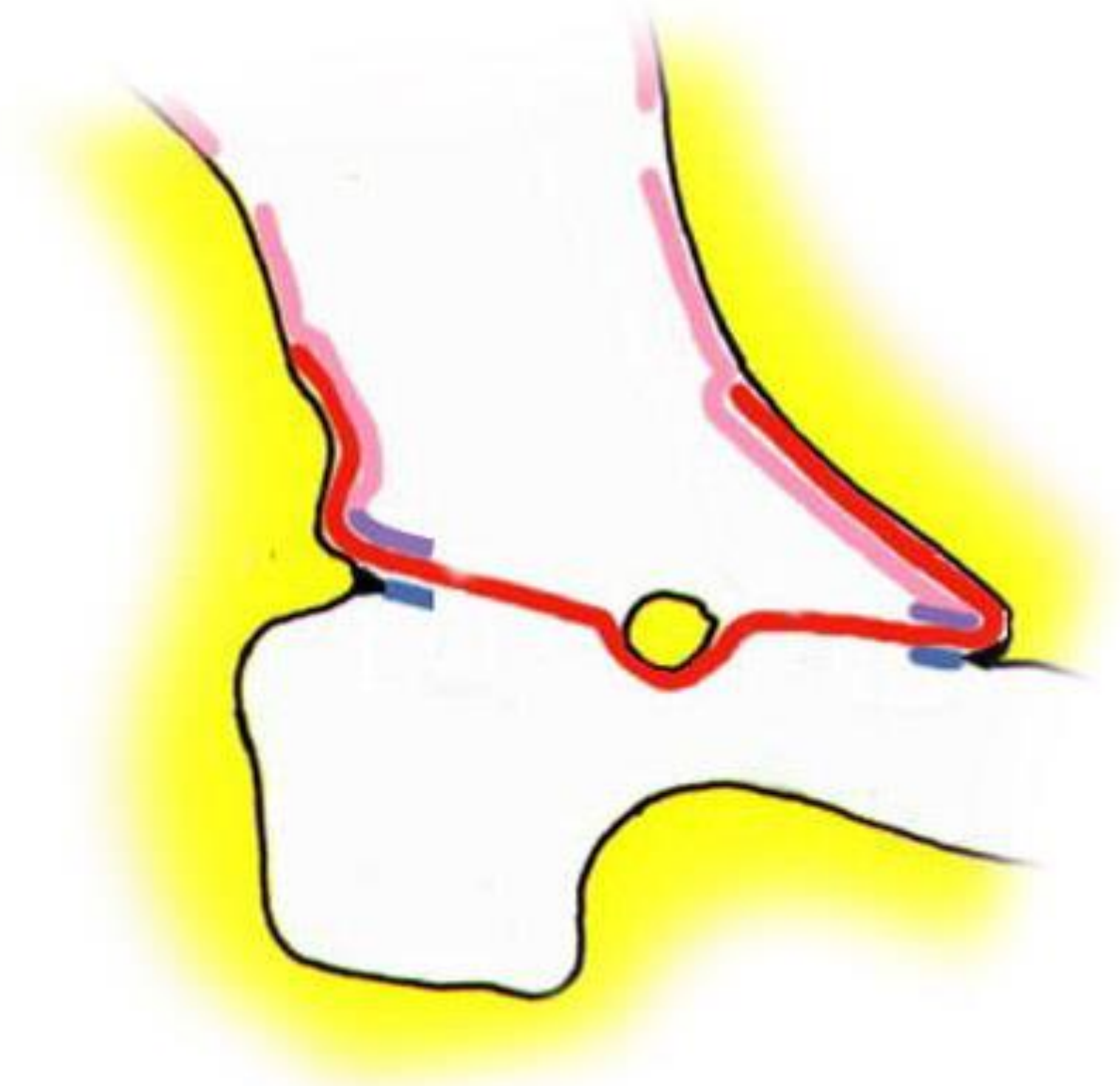


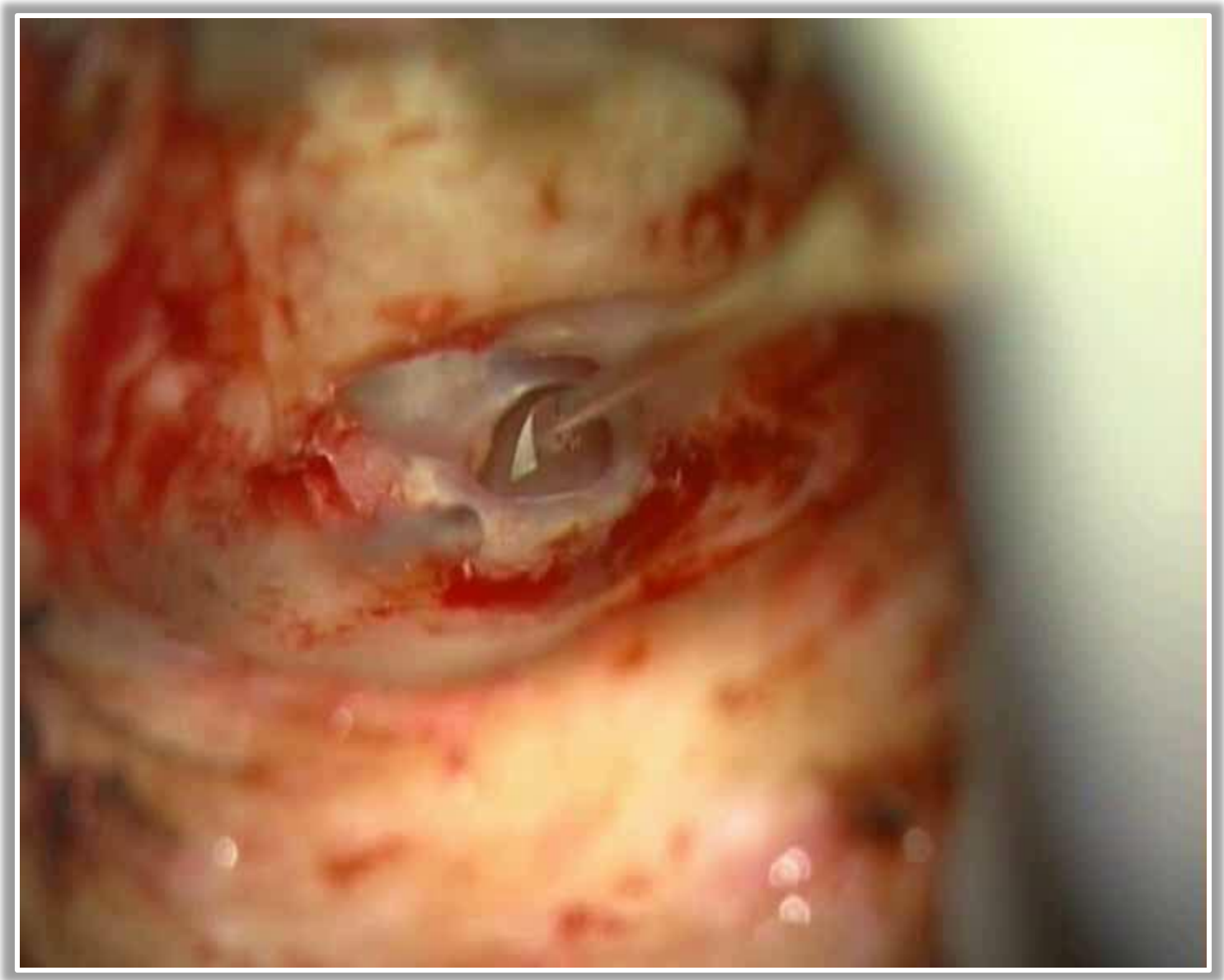










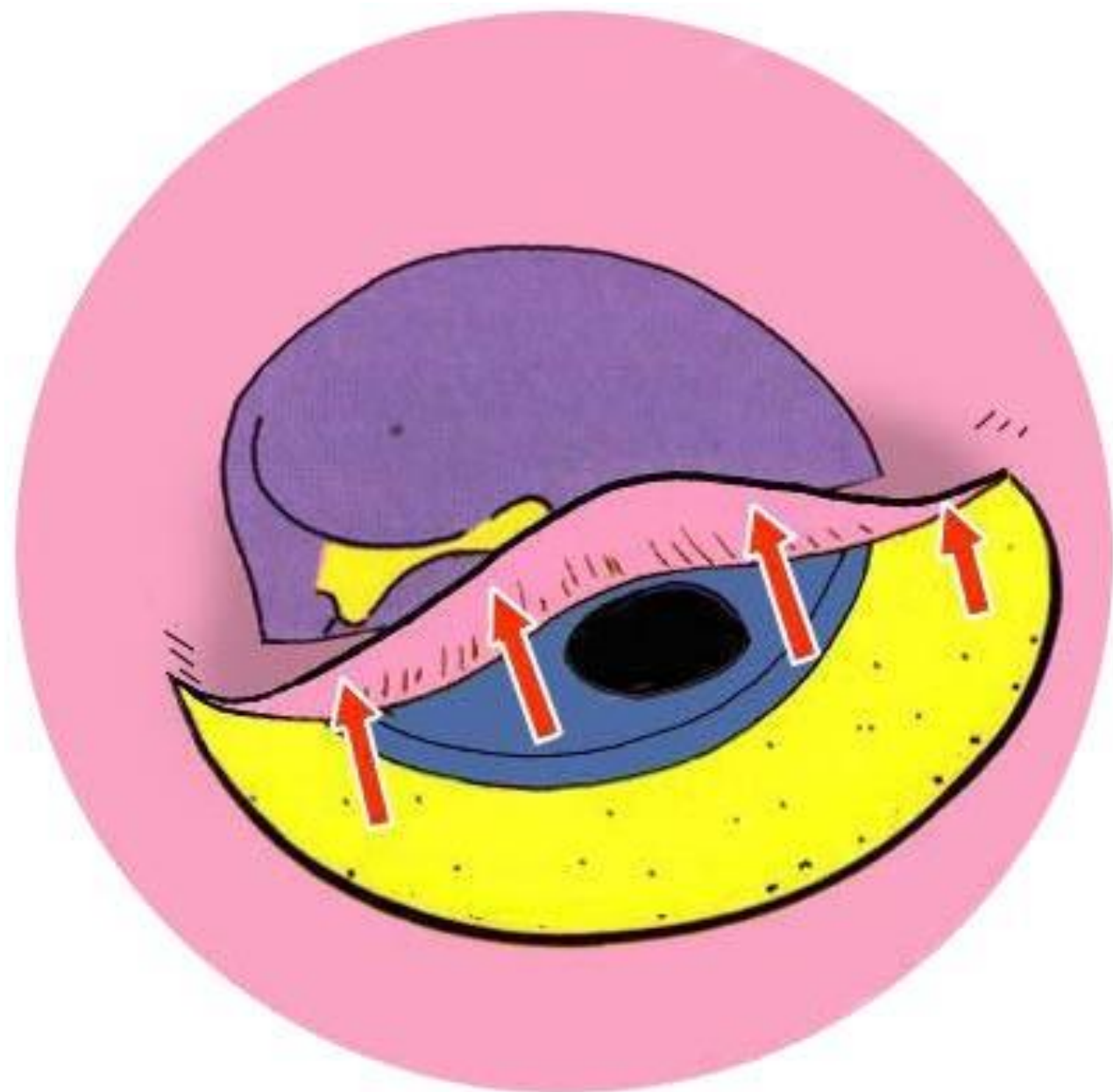


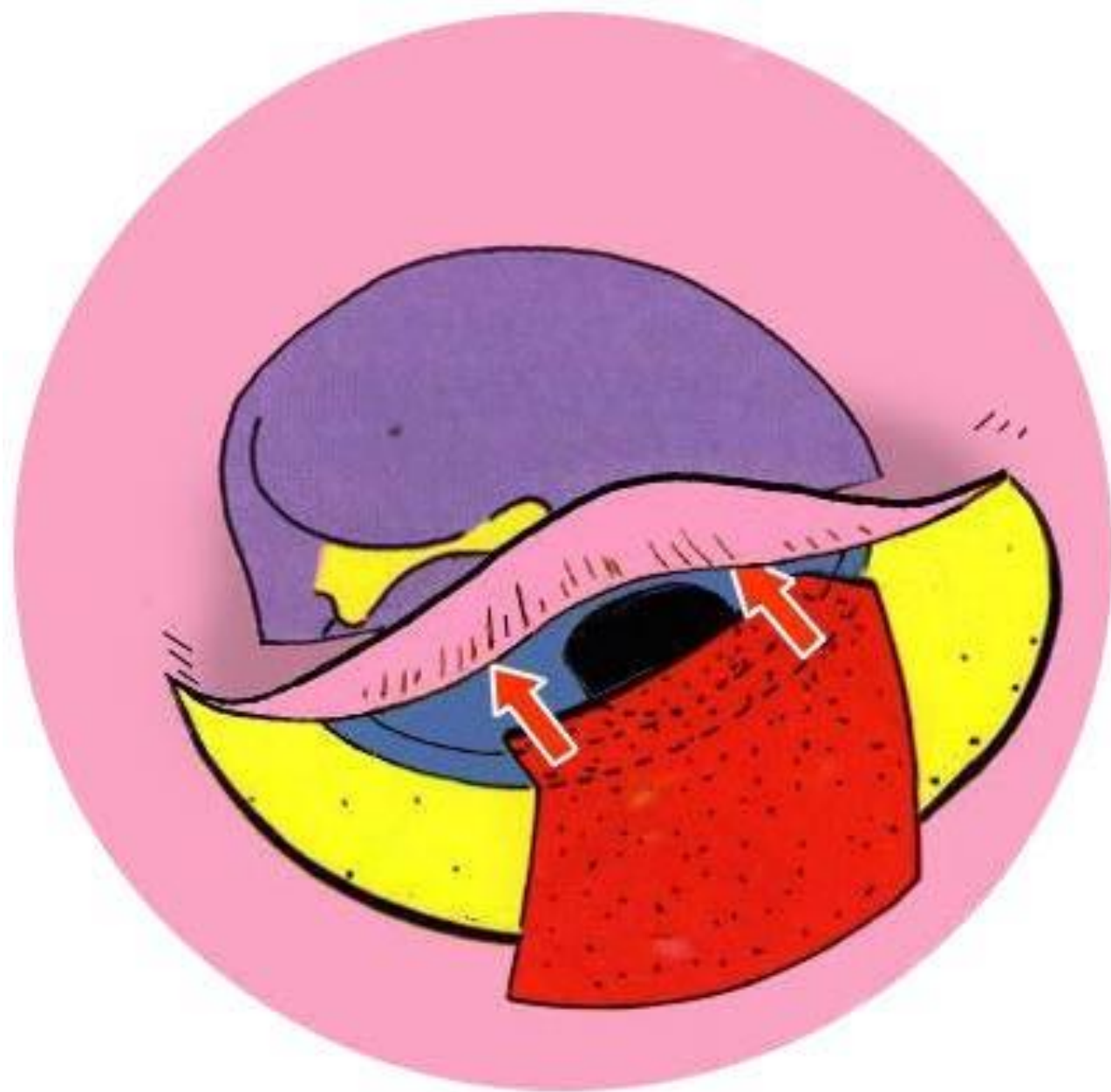
OVERLAY TECHNIQUE

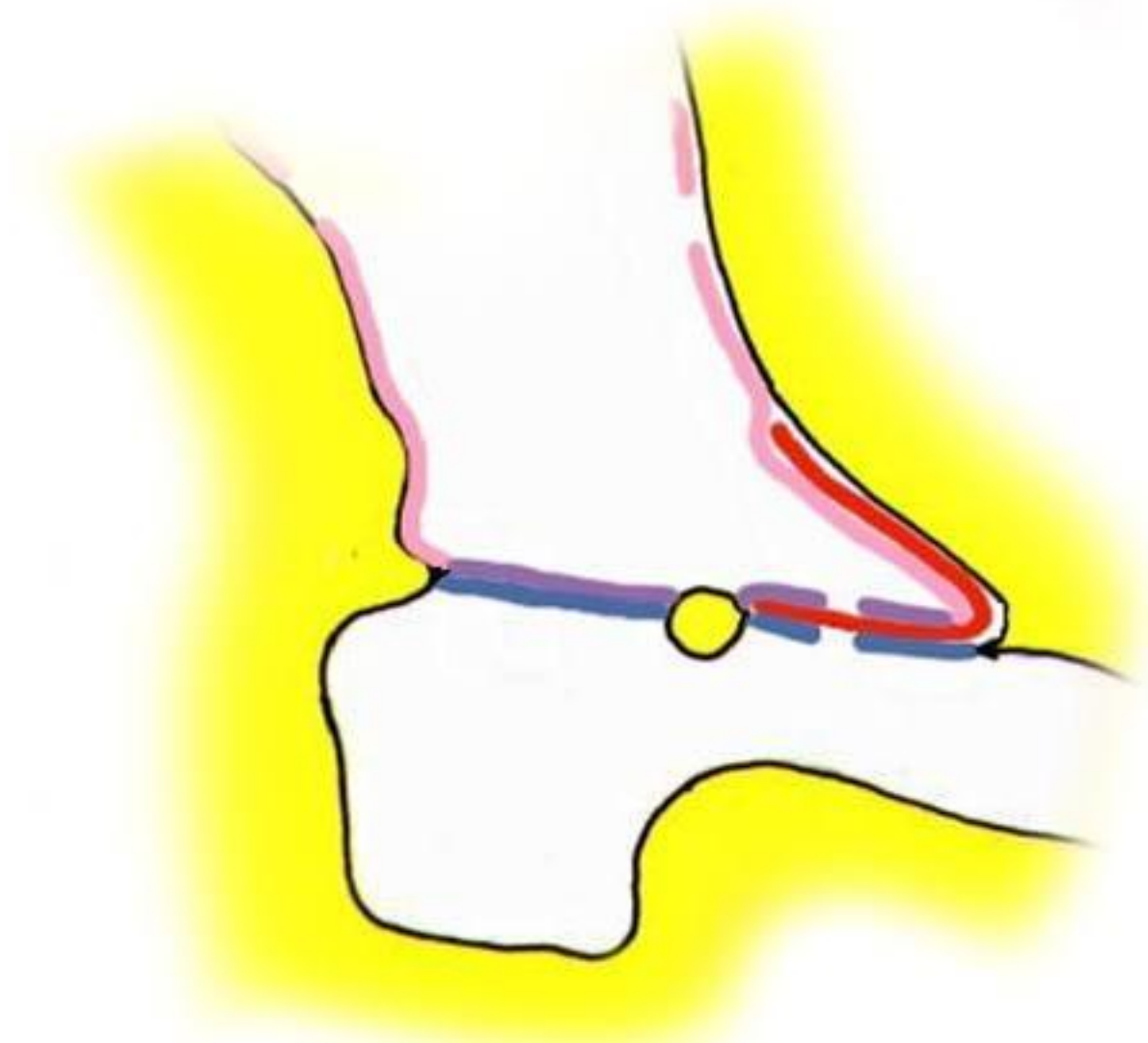
A thick, horizontal yellow brushstroke underline that spans most of the width of the page, positioned directly below the main title.

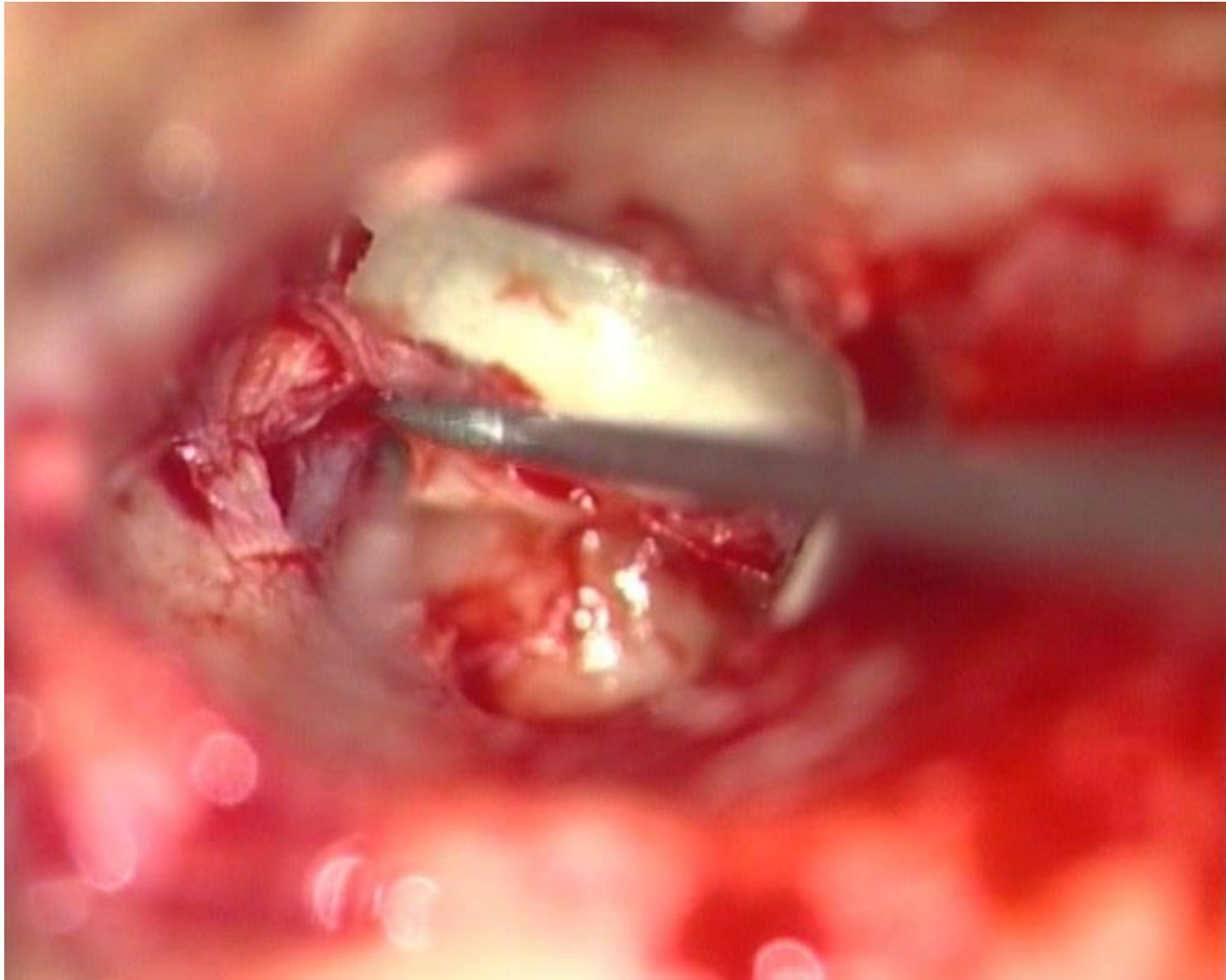
Over the malleus





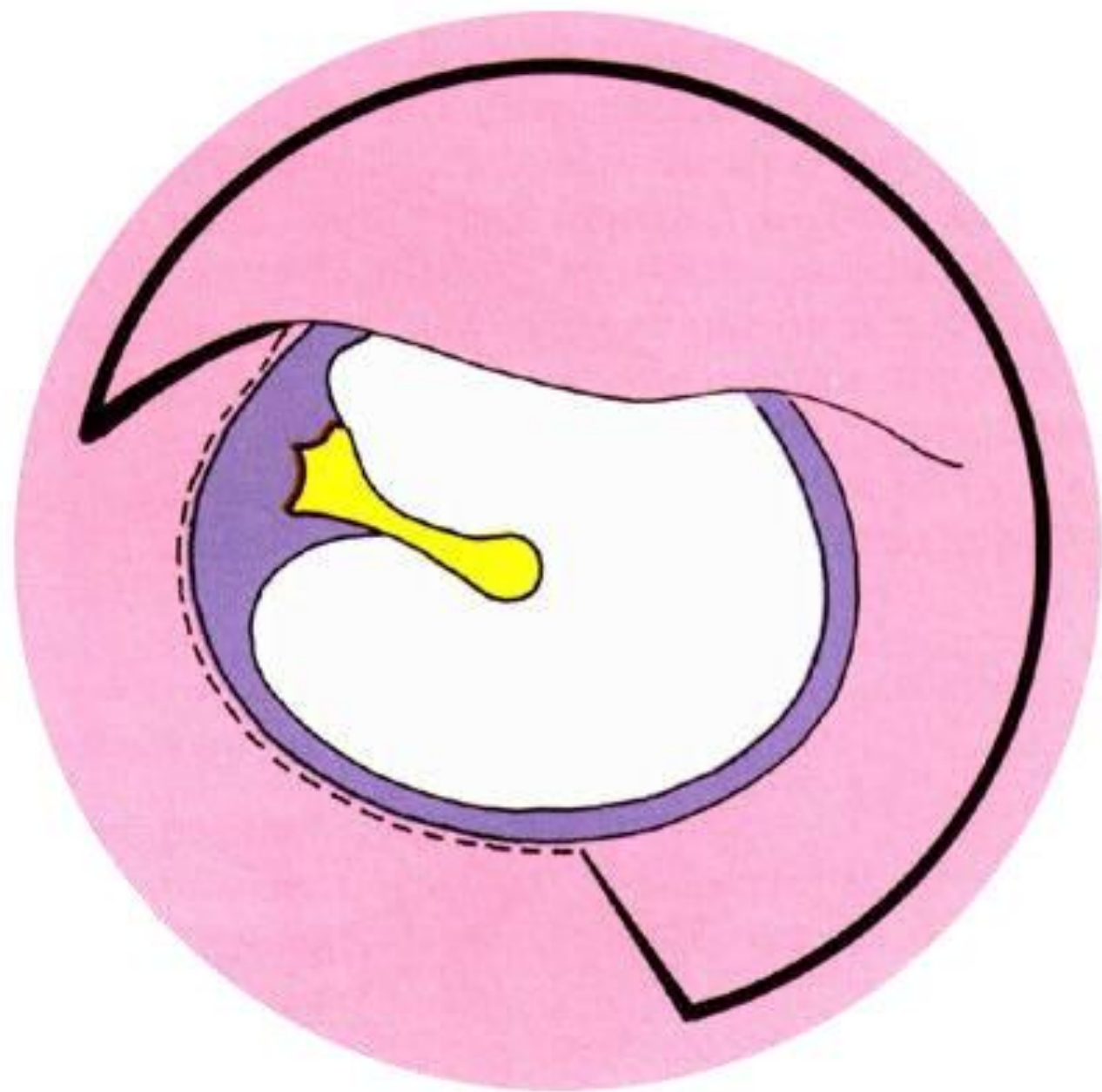


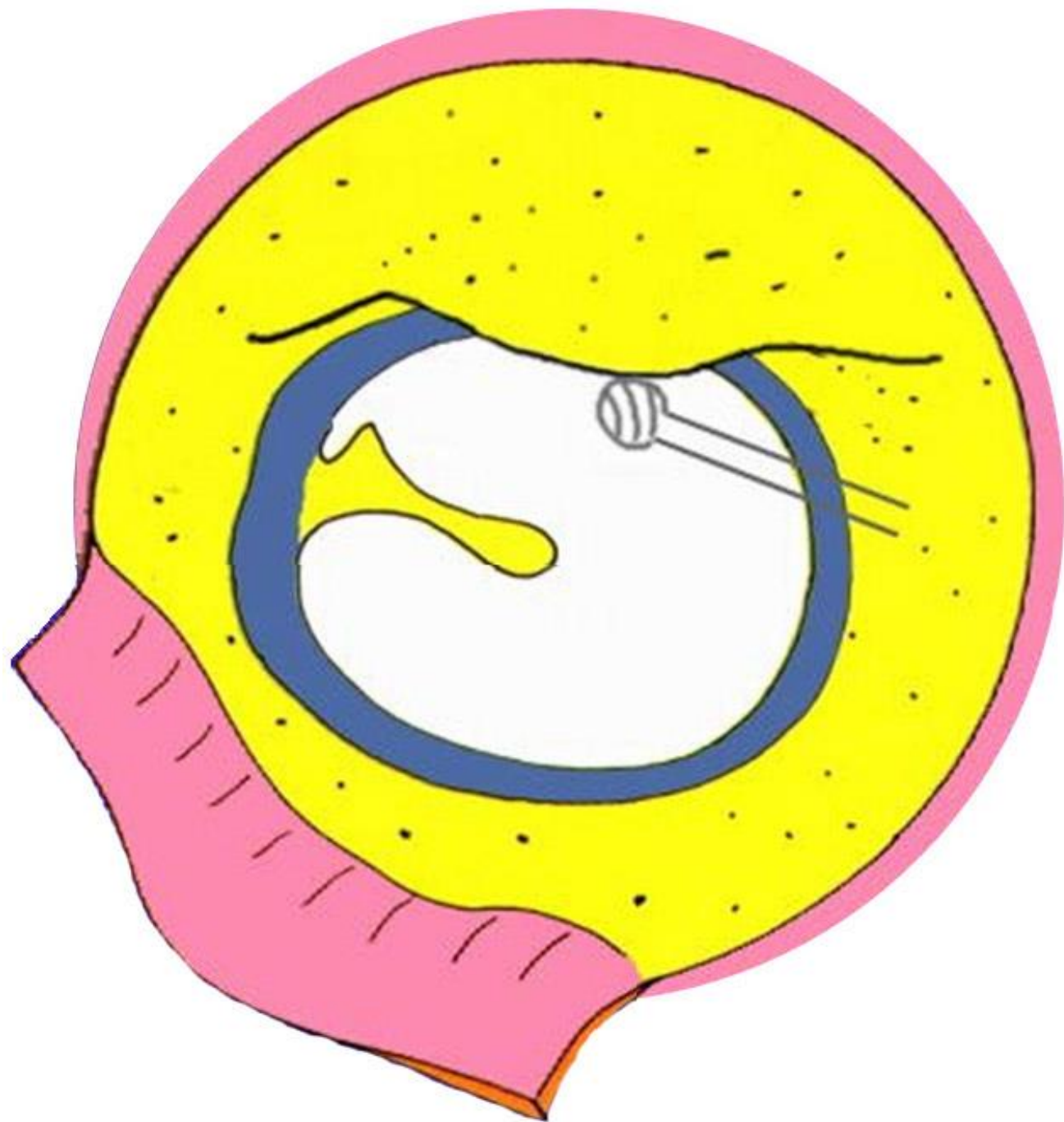


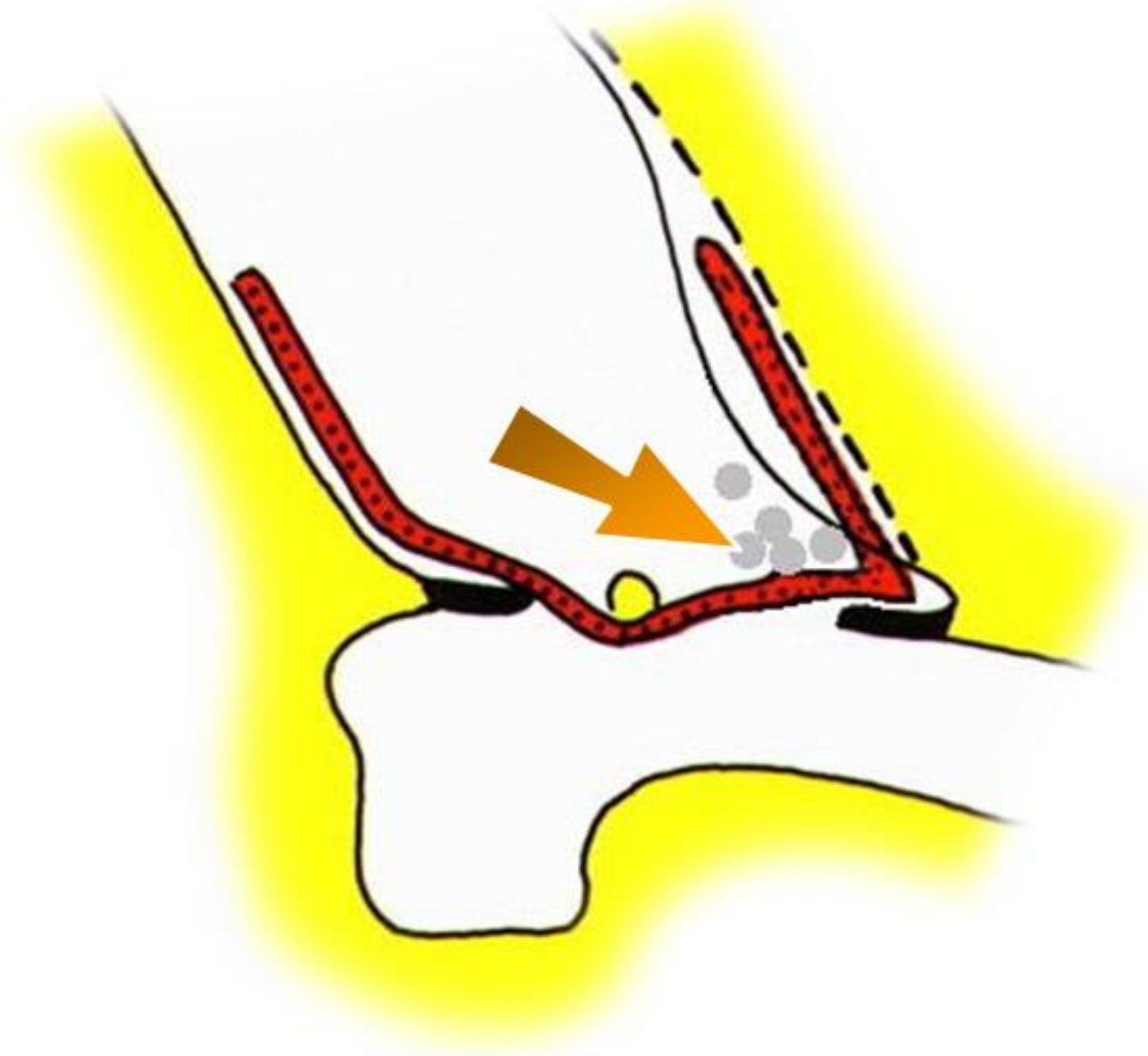


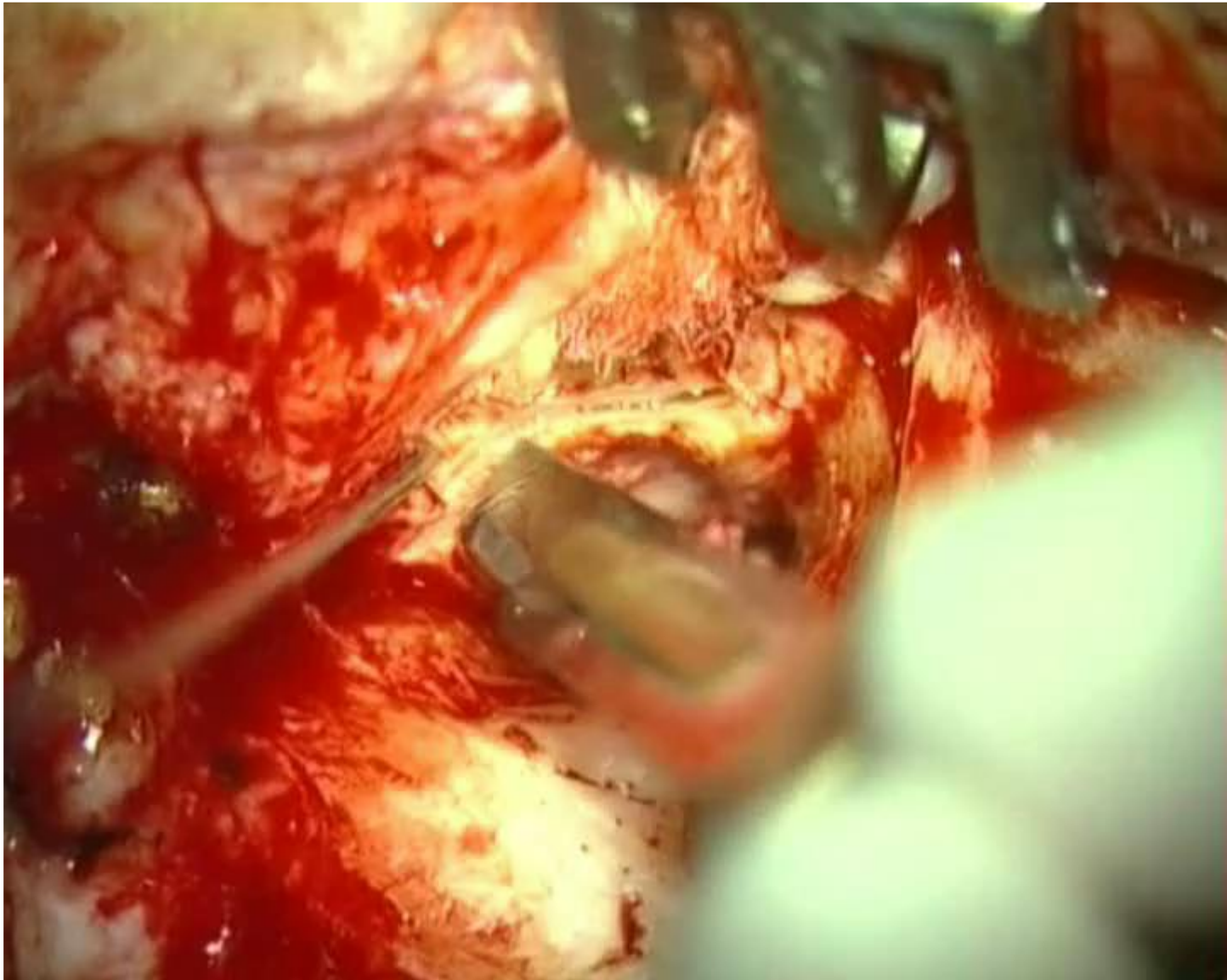
SHEEHY TECHNIQUE









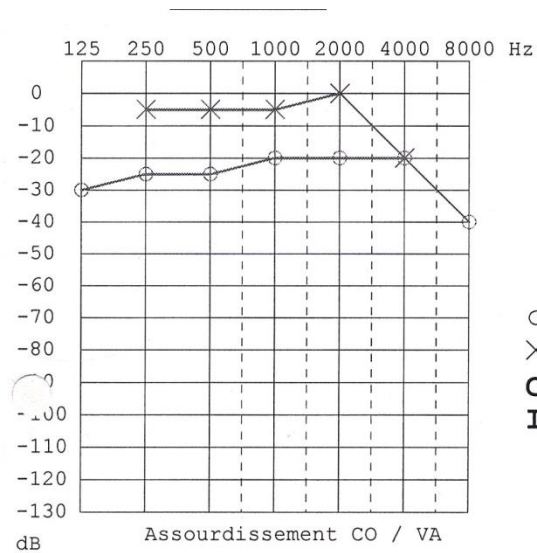
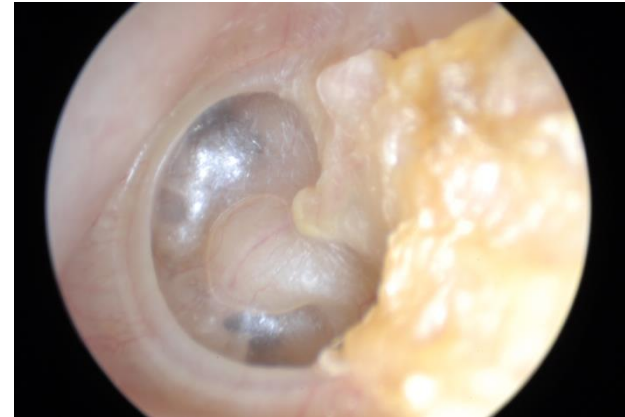


CARTILAGE TECHNIQUE

A thick, horizontal yellow brushstroke underline that spans the width of the text above it, with a slightly textured, hand-painted appearance.

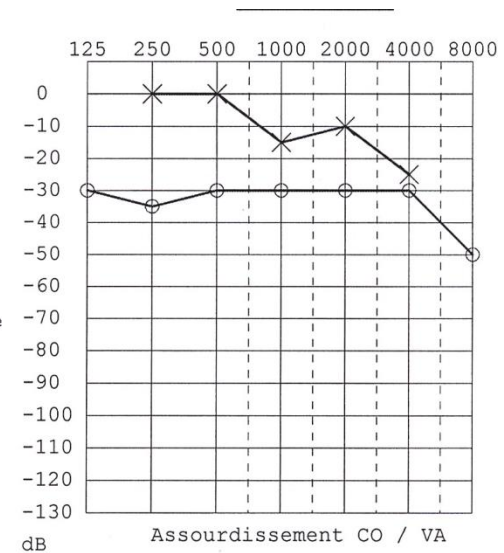


LOU Josiane, 41 years



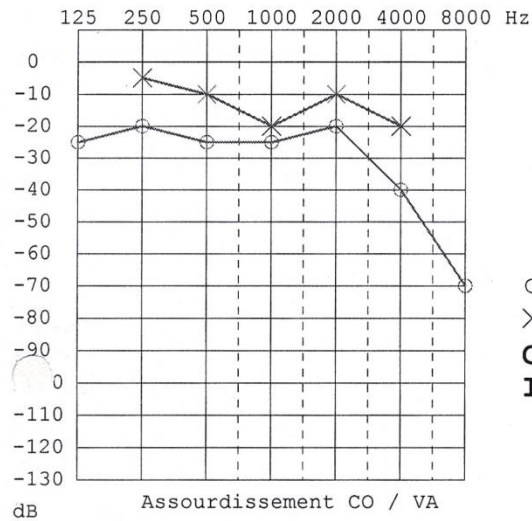
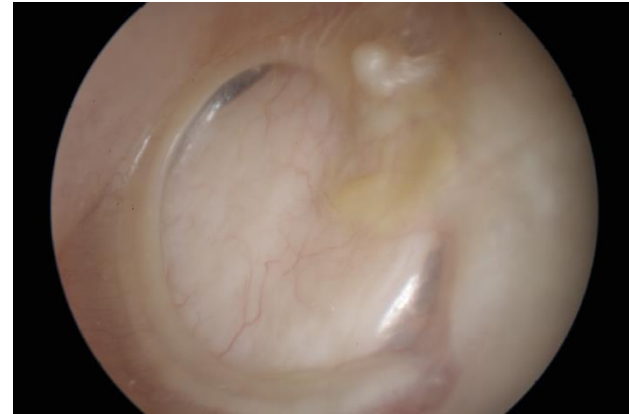
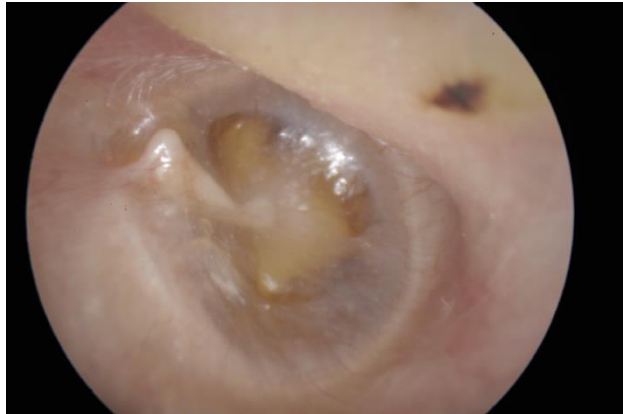
○ Cond. aérienne ○ Cond. aérienne
 × Cond. osseuse × Cond. osseuse
 C Stap. Contra C Stap. Contra
 I Stap. Ipsi I Stap. Ipsi

September 2007



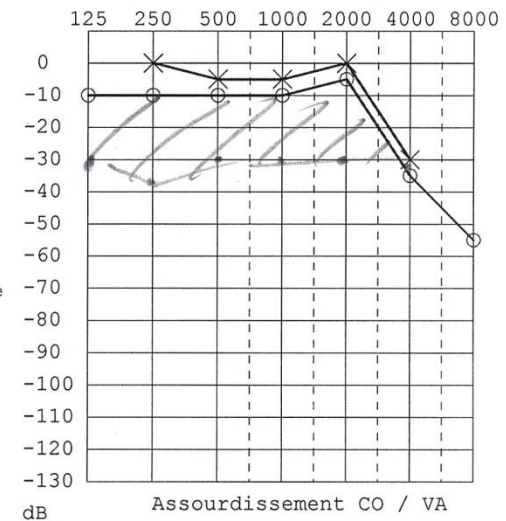
dB

LOU Josiane, 41 years



○ Cond. aérienne ○ Cond. aérienne
 × Cond. osseuse × Cond. osseuse
 C Stap. Contra C Stap. Contra
 I Stap. Ipsi I Stap. Ipsi

April 2009

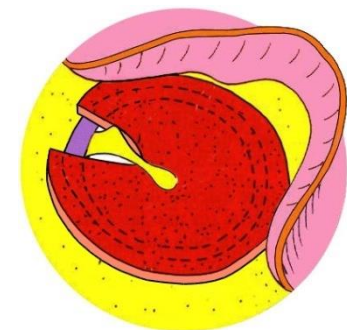
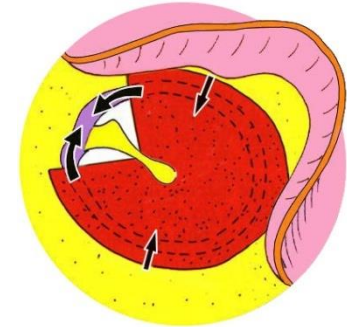
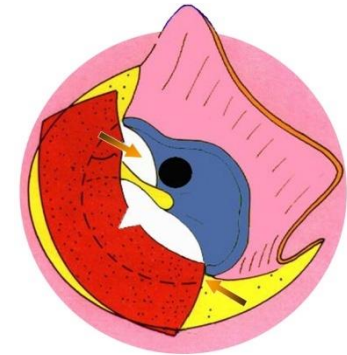


Assourdissement CO / VA

CHOICE OF THE TECHNIQUE

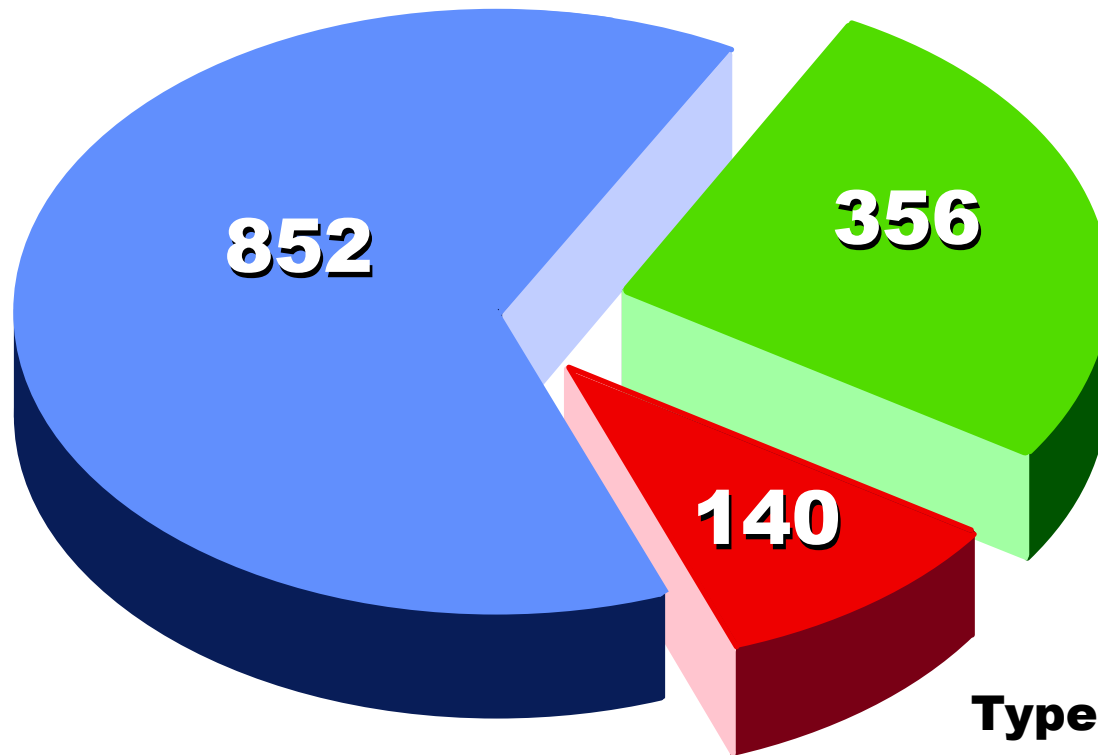
Synthesis

- Posterior perforation primary case
 - ▶ Inlay over the malleus
- Total perforation primary case
 - ▶ Overlay over the malleus
- Inflammatory middle ear or secondary case
 - ▶ Cartilage over the malleus



RESULTS

1348 tympanoplasties



**Tympanoplasties
In children**

Type I tympanoplasties

RESULTS

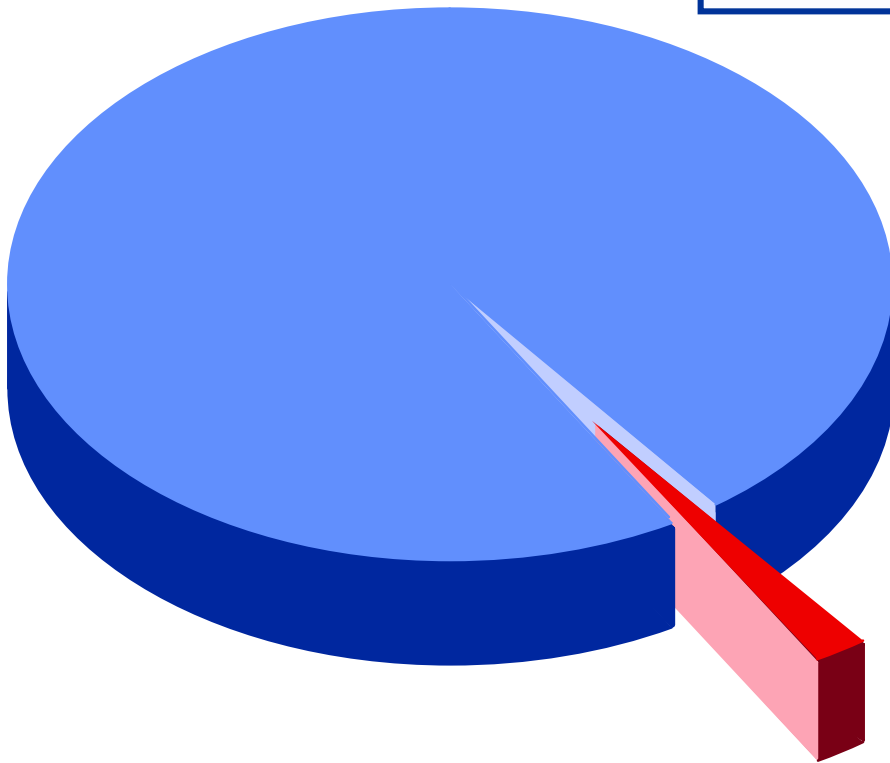
Analysis

- Global results
- Results according to techniques
- Results according to age

GLOBAL RESULTS

1st year

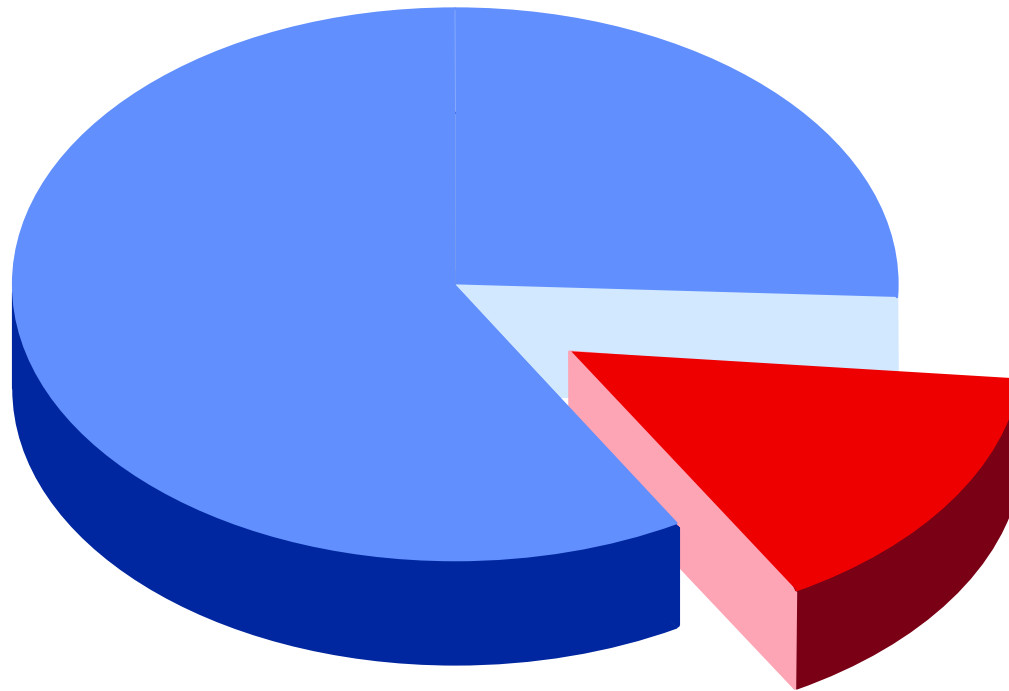
Closed tympanic membrane : 96 %



Residual perforation : 4 %

TECHNIQUES

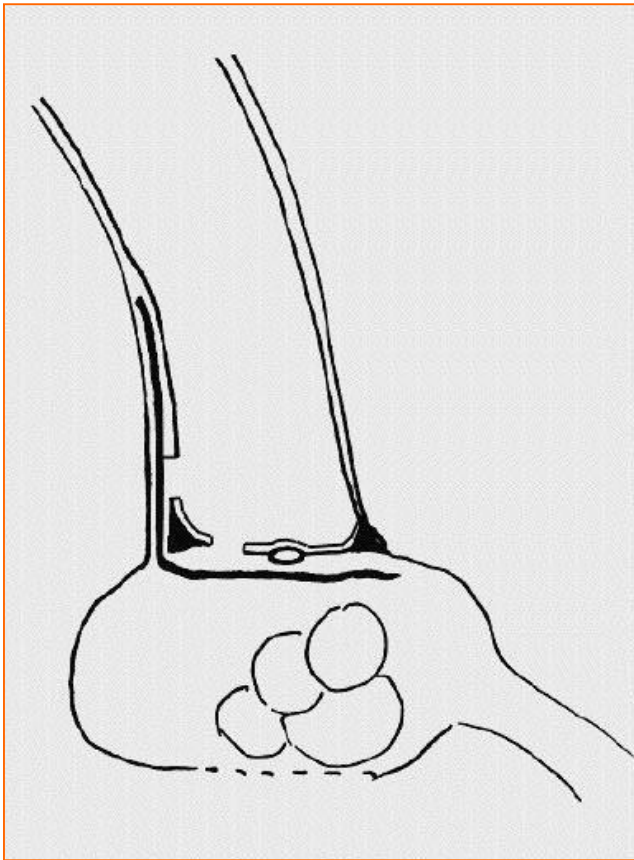
- Overlay technique : **81 %**



- Inlay technique: **19 %**

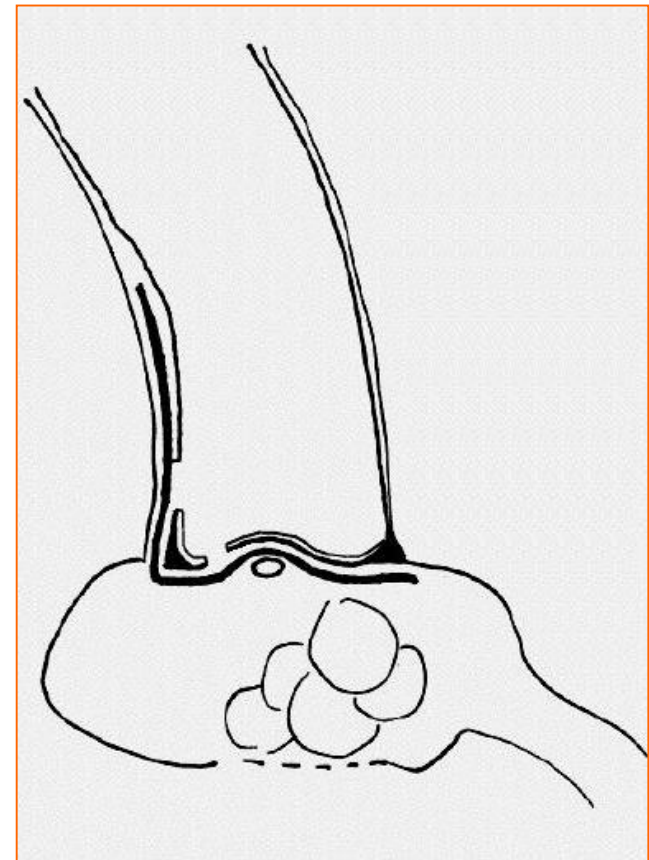
INLAY REPERFORATIONS

Under the malleus : 9 %



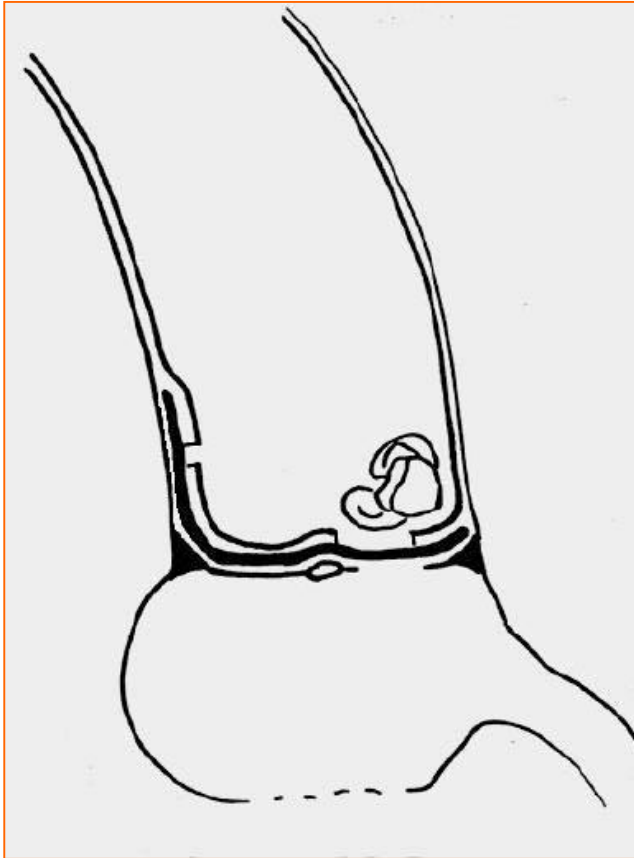
7,7 %

On the malleus : 6,6 %



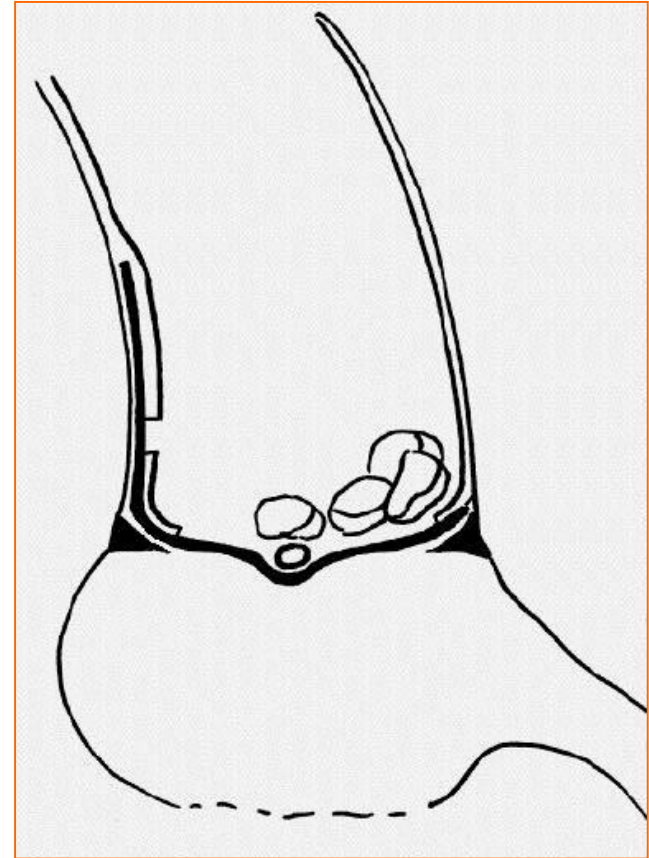
OVERLAY REPERFORATIONS

On the malleus : 4 %



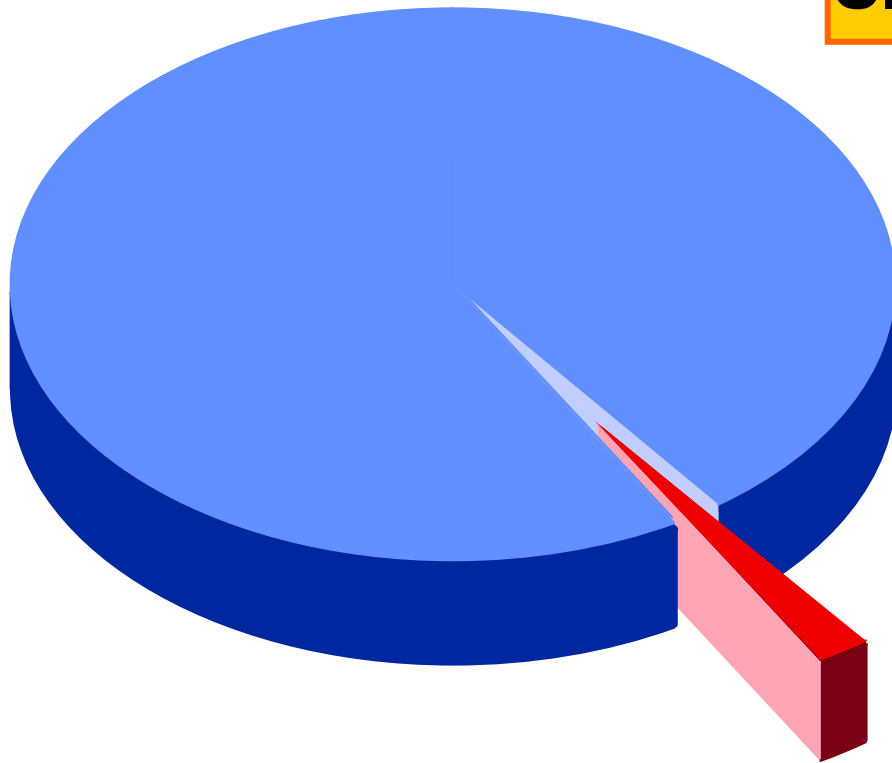
**↓
2,7 %**

Under the malleus : 0 %



RESULTS IN CHILDREN

Closed tympanic membrane : 96 %

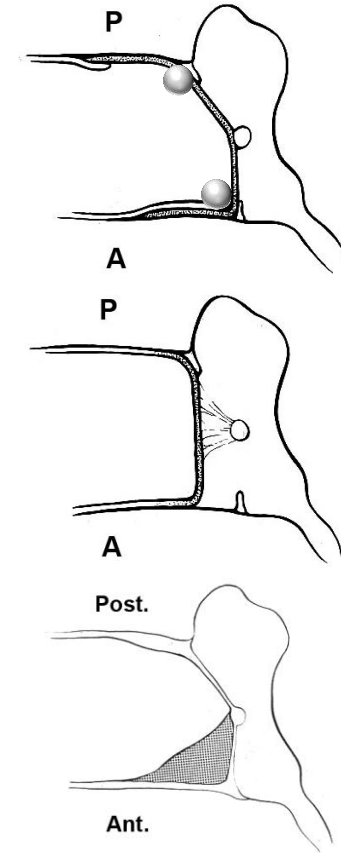


- Normal tympanic membrane : 87 %
 - Retraction : 3 %
 - S.O.M. : 5 %
- Cholesteatoma : 1 %

4 % perforation

COMPLICATIONS

- Epithelial cyst
- Lateralisation
- Blunting
- Reperforation

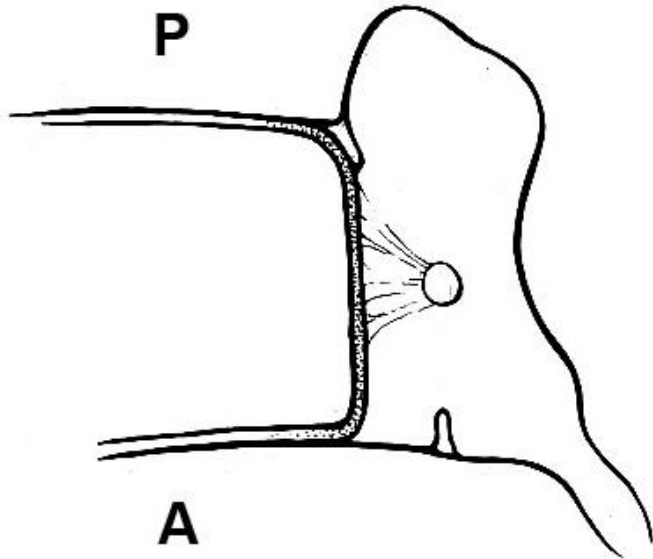


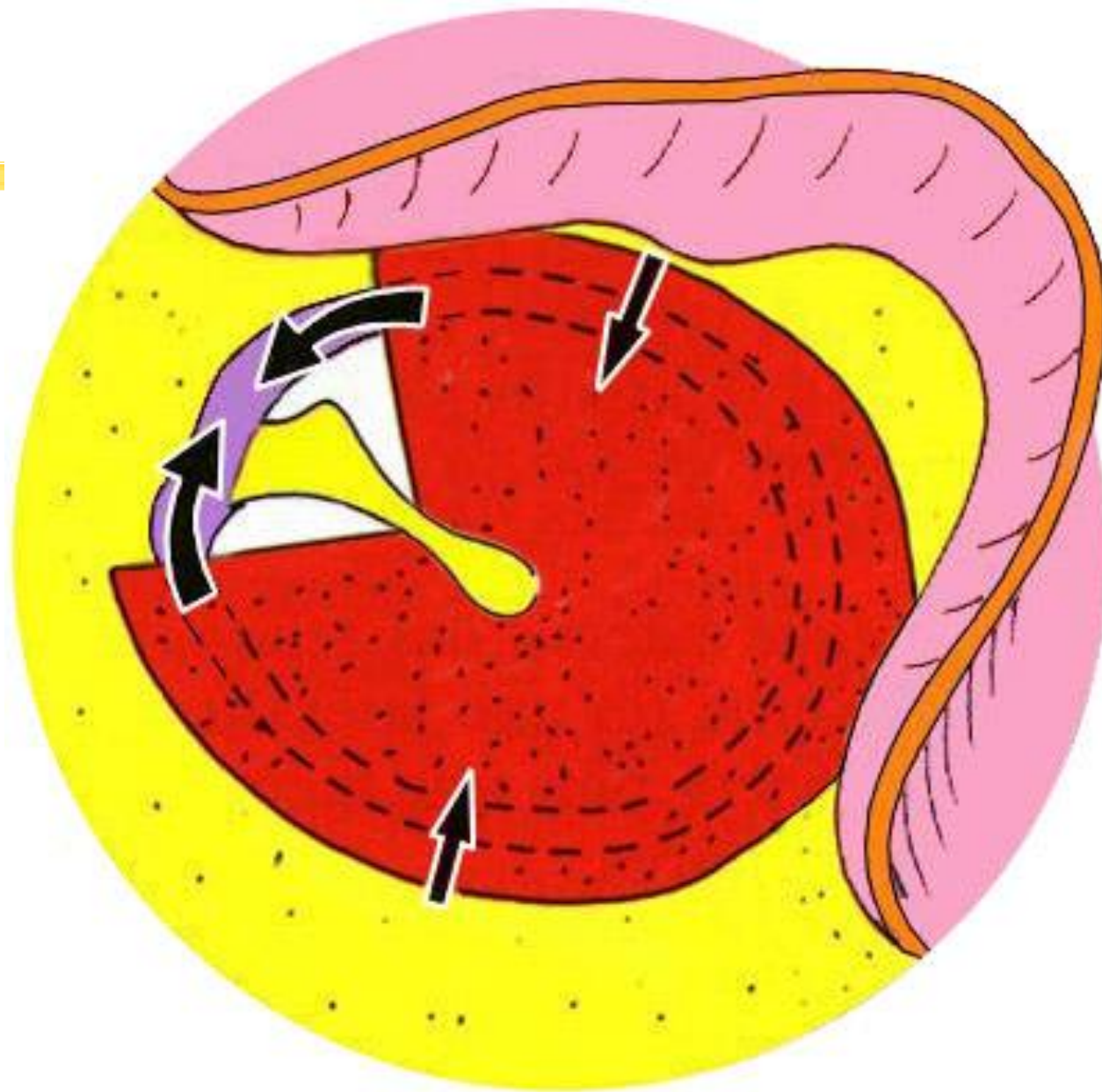
EPITHELIAL CYST



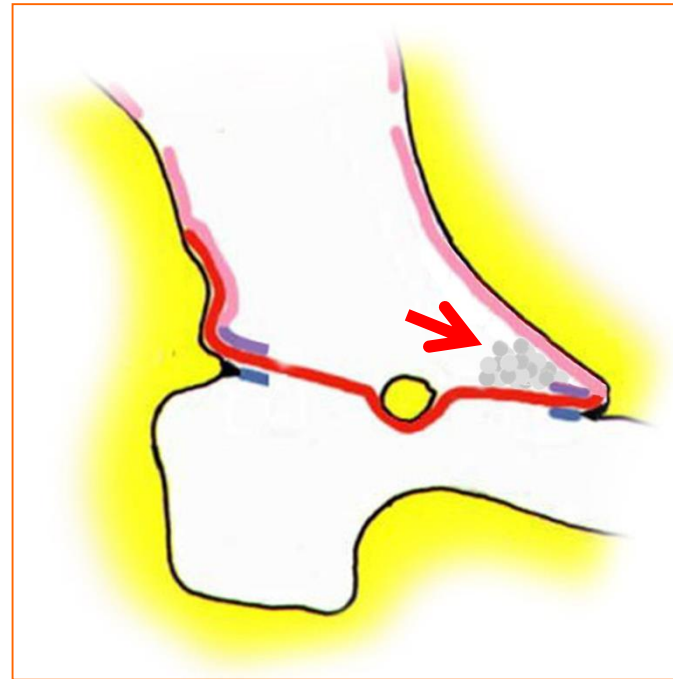
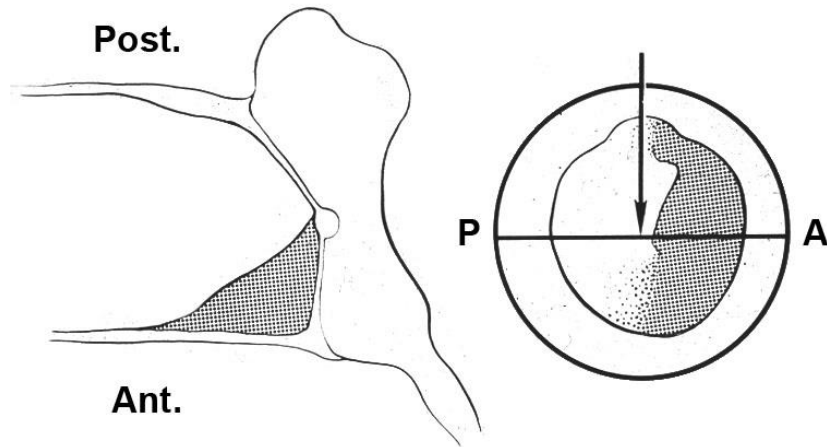
- Importance du suivi, surtout chez l'enfant

LATERALIZATION PREVENTION

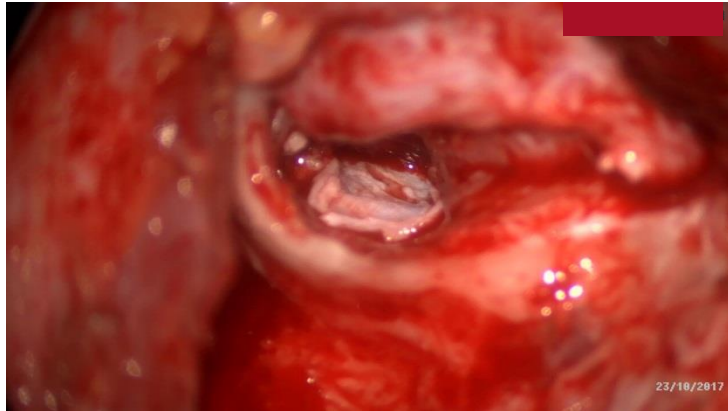
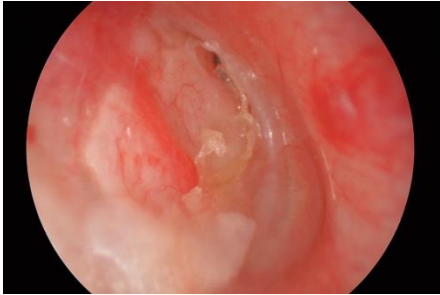
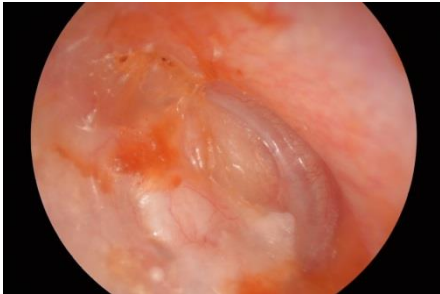
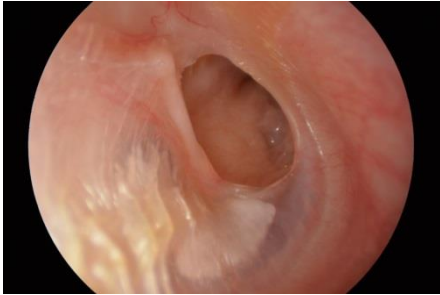




BLUNTING PREVENTION



PREVENTION ANTERIOR REPERFORATION



Swallowing



CHILDREN

- At what age ?
 - When an audiometrical test is available
 - At the end of adaptative disease
 - Follow up 6 months

→ Âge : 6 à 7 ans



CONCLUSION



- ① Surgical indications depend on the chief complaints
- ② The choice of each technique depends upon a careful otoscopic exam
- ③ According to our experience, overlay technique gives better results but should be done rigorously
- ④ Results are the same in children and adults



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D'ORL ET DE CHIRURGIE
DE LA FACE ET DU COU

Thank you for your attention