

1064

LATERALIZED PISTON SYNDROME

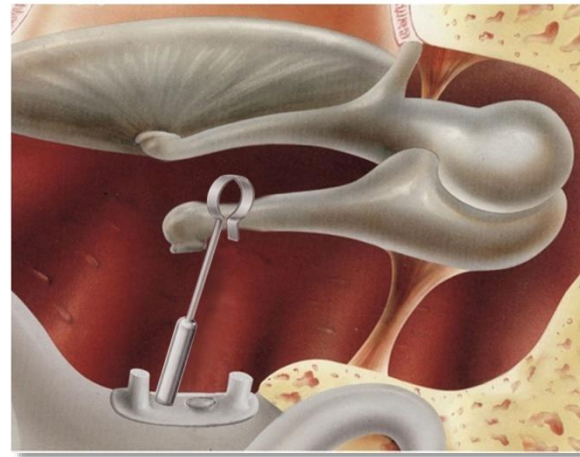
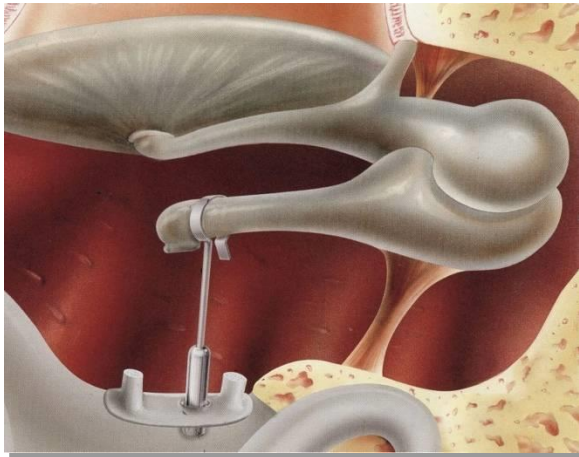
■ B. FRAYSSE,



DUBAI

March 2019, 28-29-30

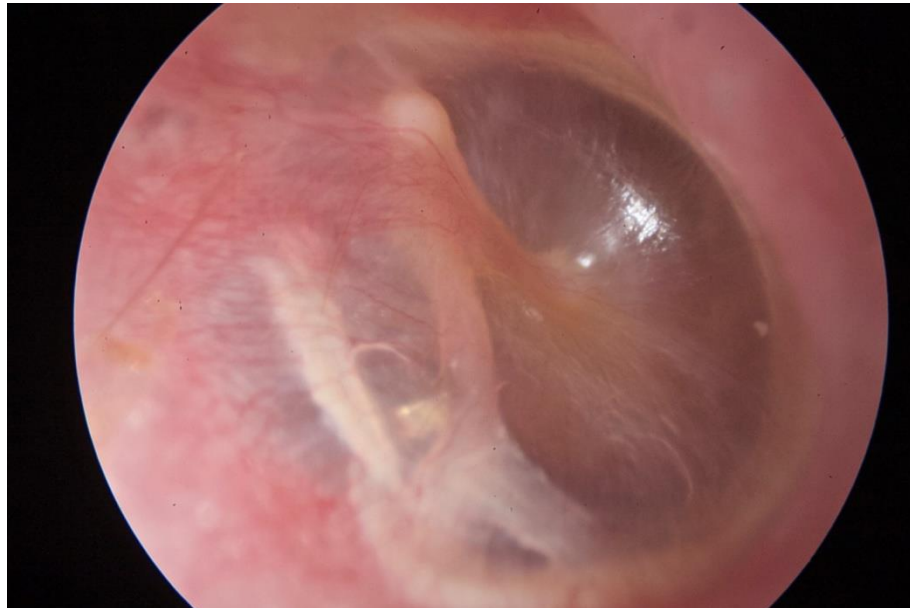
DEFINITION



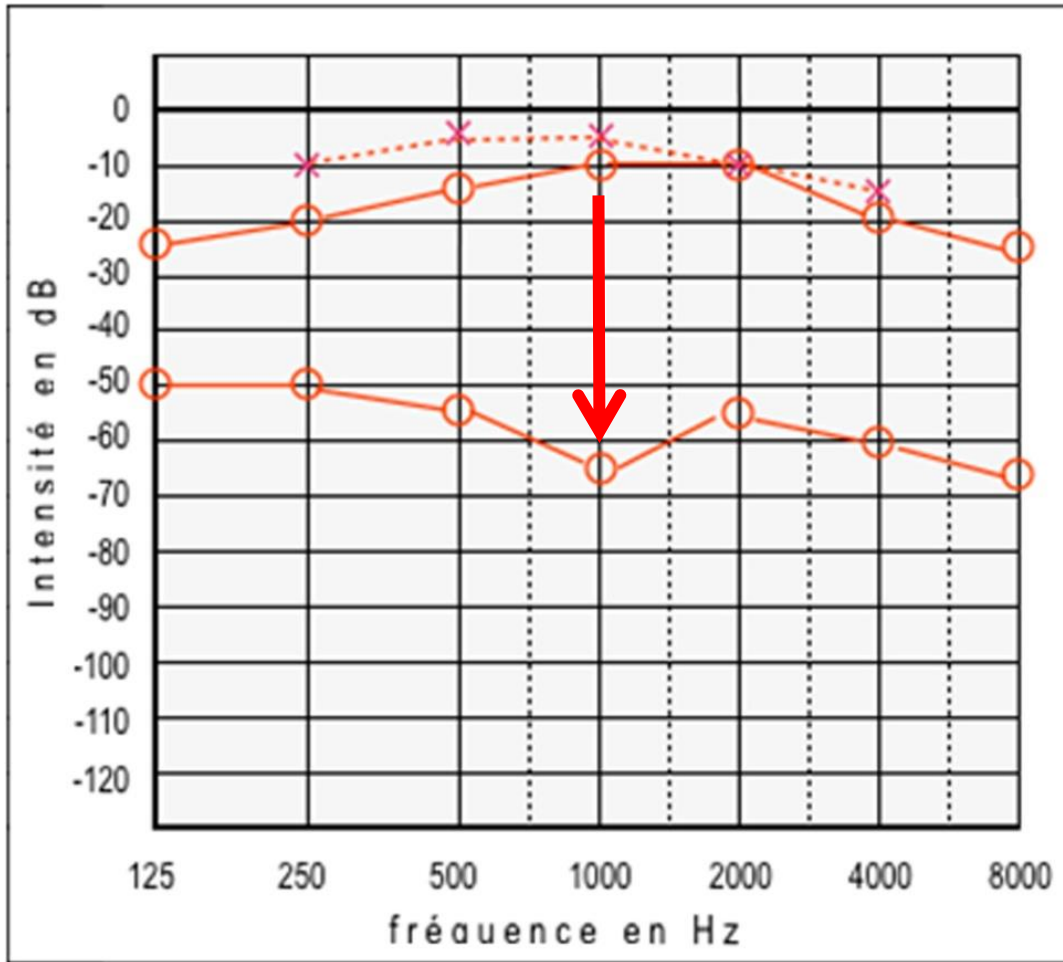
- Lateral displacement of the piston, with partial erosion of the incus and closing of the stapedotomy hole

CLINICAL SYMPTOMS

- Delayed post operative conductive hearing loss
- Hearing fluctuation improved after Valsalva
- Otoscopy : prosthesis loop against the tympanic membrane



PURE TONE AUDIOGRAM



◀ Postoperative audiogram

◀ Secondary conductive hearing loss

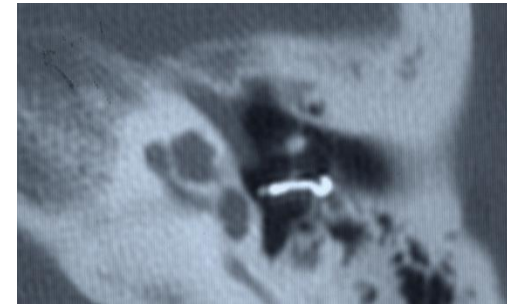
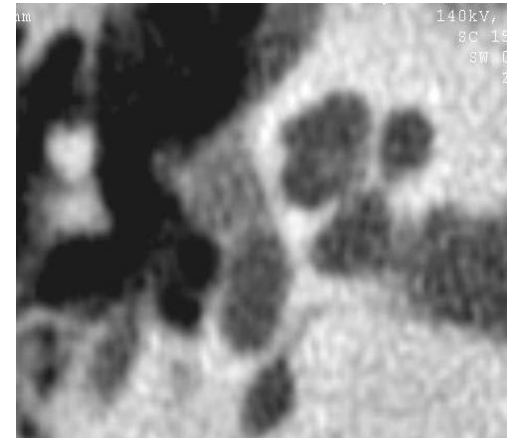
Mean Air Conductive : 60 dB

RADIOLOGICAL FINDINGS

- Positive focus in 94%

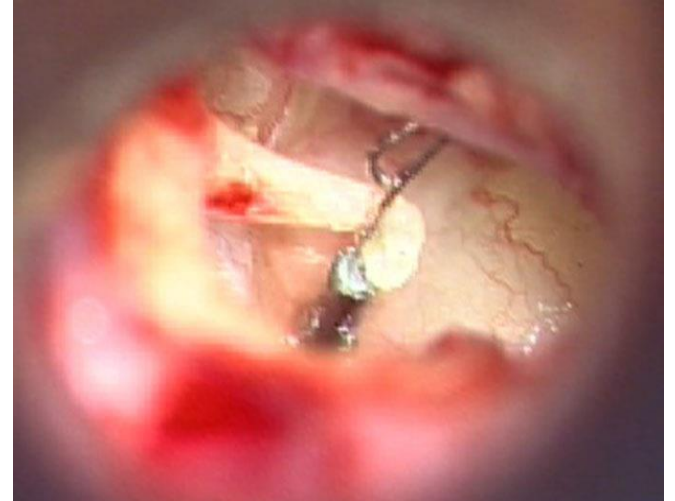
- Position of the piston nearby the tympanic membrane

- Piston out of the stapedotomy hole



SURGICAL FINDINGS

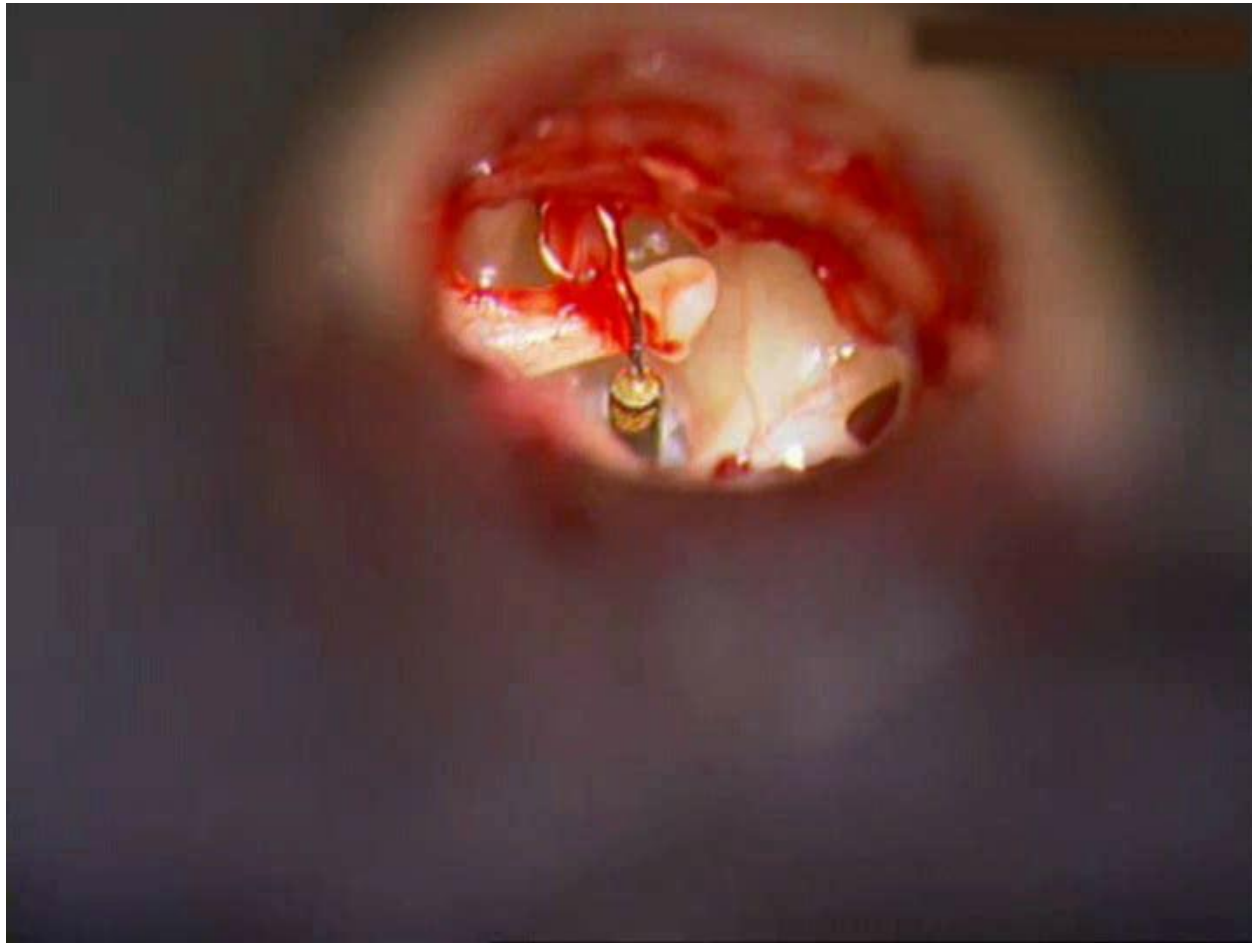
- Lateral displacement of the piston in the axis of the stapes. No or partial erosion of the incus



- Closing of the stapedotomy hole

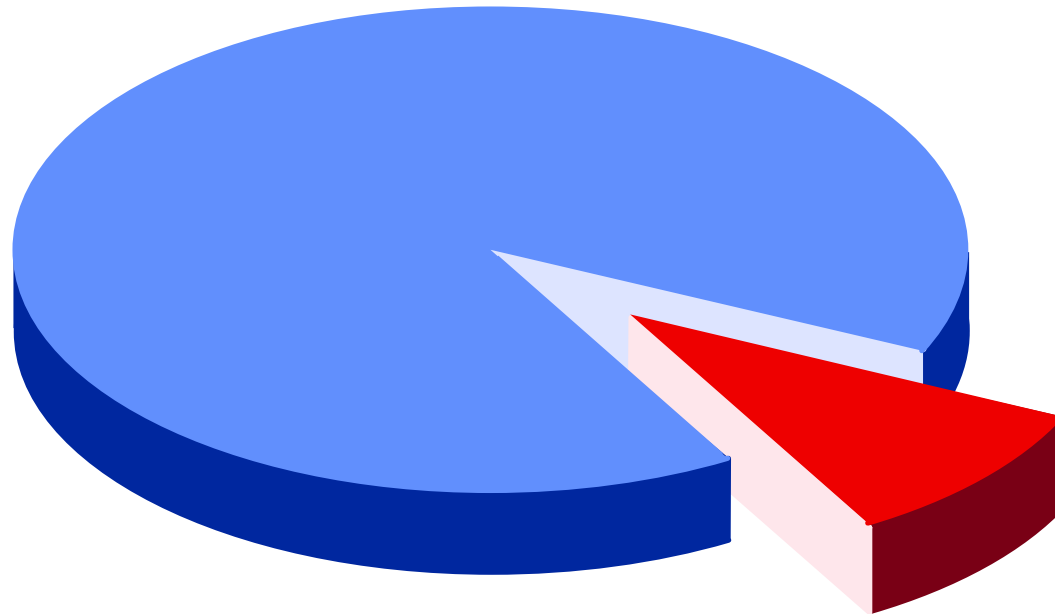


LATERALIZED PISTON SYNDROME



POPULATION

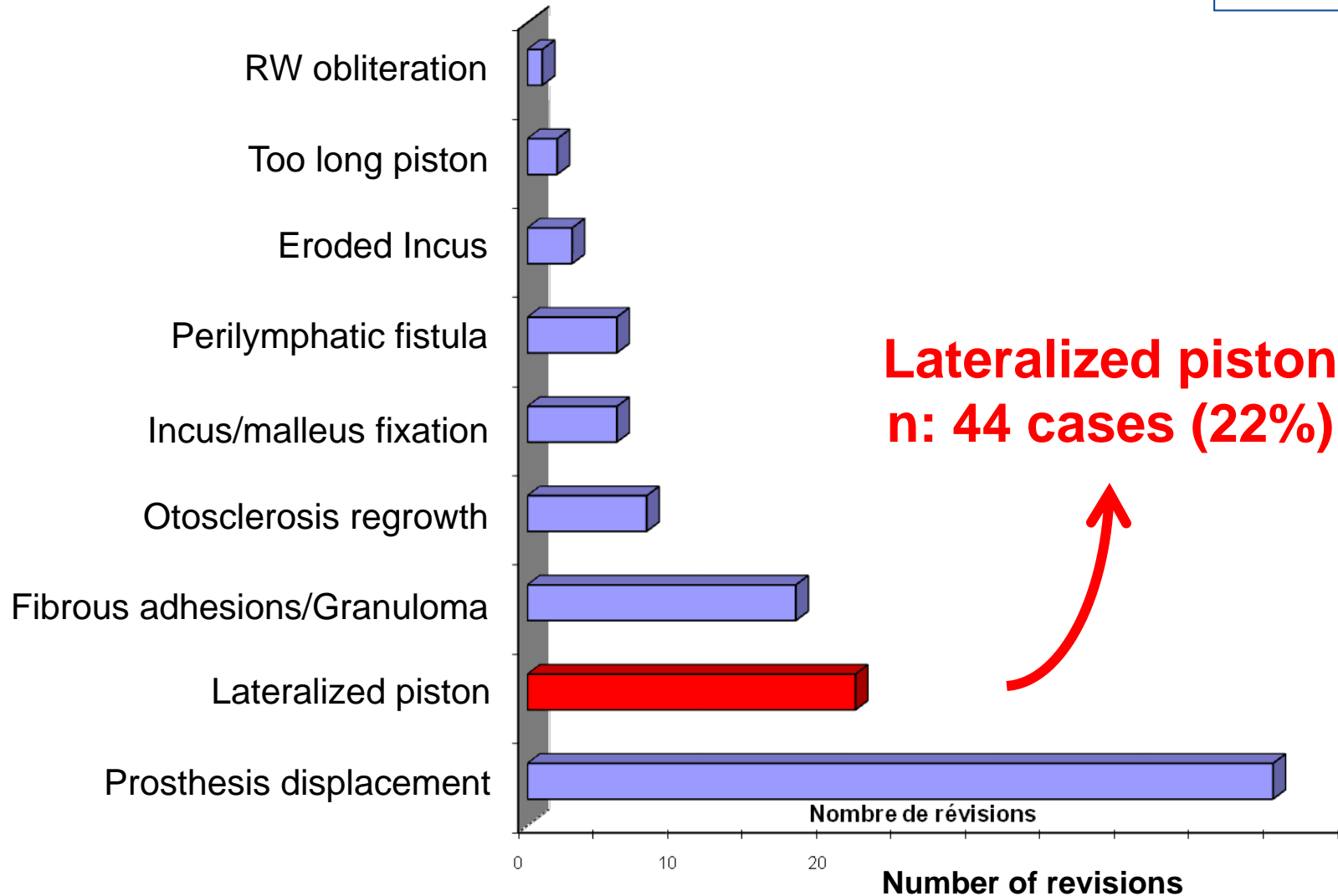
2180 surgeries
1993 - 2013



202 Revisions
9%

REVISION SURGERY

202 cases



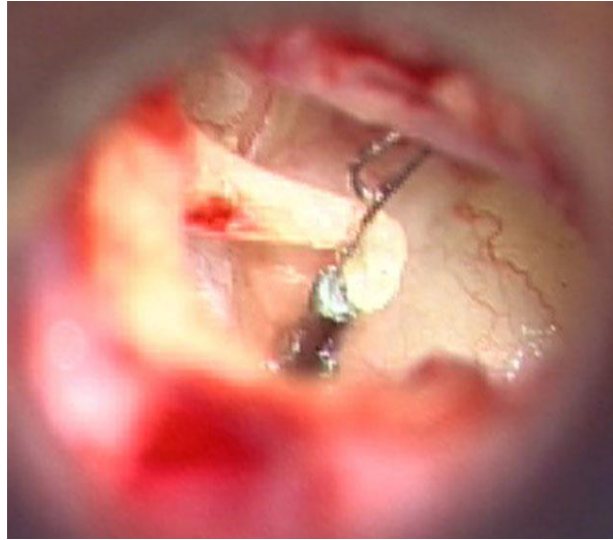
SURGERY

- Mean interval between first surgery and revision : 12 years
- Surgical technique
 - Under local anesthesia
 - Laser stapedotomy
 - Piston (84%) vs TORP (16%)
 - Use of cement in 20 cases
 - Length of the piston + 0.5 mm

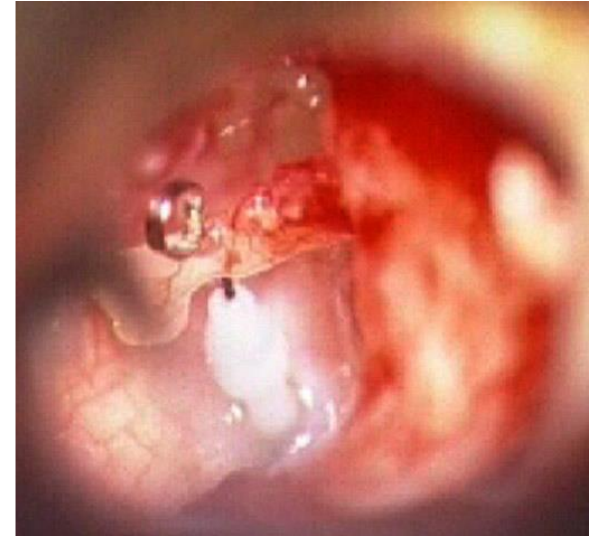
● Richards



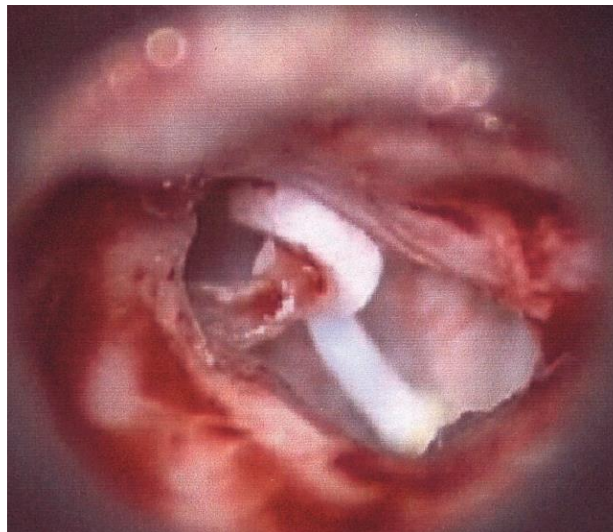
● Mac Gee



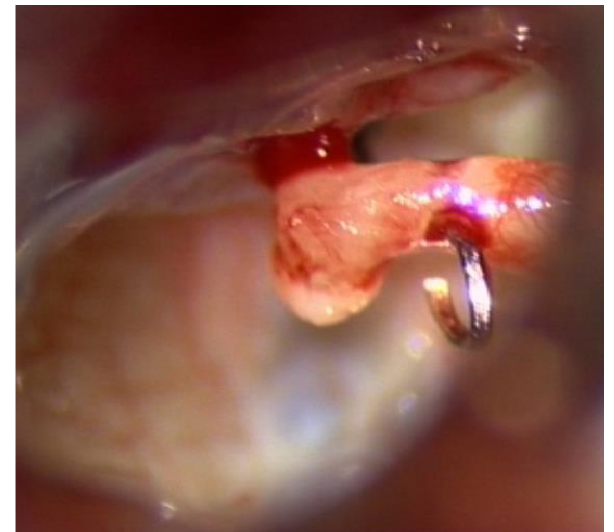
● Fisch



● Schuknecht



● Causse



● Big Easy

OVERALL RESULTS

Rinne	Patients N	%
≤ 10 dB	19	41%
≤ 20 dB	40	87%
No improvement	5	9%
Decrease in hearing	2	4%

RESULTS – TYPE OF PISTON



	Conventional piston	Curved piston	TORP
N	31	9	6
Rinne \leq 10 dB	48%	55%	0
Rinne \leq 20 dB	93%	85%	50%

NS

Significant $p < 0.05$

RESULTS CEMENT VS NO CEMENT

Rinne	Rinne \leq 10 dB	Rinne \leq 20 dB
With cement (N 20)	40%	90%
Without cement (N 26)	46.2%	84.6%
« <i>p</i> » value	<i>p</i> = NS	<i>p</i> = NS

PHYSIOPATHOLOGY

① Too short piston and excessive air pressure changes in the middle ear

(Farrior.B;AnnOtolRhinolLaryngol 1981: 90;636-9)

② Excessive inner ear pressure changes

(Farrior.B;AnnOtolRhinolLaryngol 1981: 90;636-9)

None radiological abnormalities of the inner ear

③ Eversion of the lining membrane of the vestibule

(Shea.JJ;Laryngoscope 1974: 84(7);1122-34)

CONCLUSION

- Lateralized piston syndrome is not rare 22%
- Early detection may avoid incus necrosis
- The cause may be a large compliance of the tympanic membrane with a short piston
- The surgical technique consists of a prosthesis on the long process of the incus with or without cement
- The overall results : 87% of patients within 20dB



SFORL
SOCIÉTÉ FRANÇAISE
D'ORL ET DE CHIRURGIE
DE LA FACE ET DU COU

Thank you for your attention

IFOS WORLD MASTER COURSE ON HEARING REHABILITATION