Evolution of the otoendoscopy in the middle ear surgery. From an additional to a primary procedure

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1911-1922

Nylèn

Hömlgren

1935

Sourdille

Today ...
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Otoendoscopy ...

... and lateral access

Cholesteatoma and retraction pockets

- Development of canal wall-up tympanoplasties
  - less invasive
  - more conservative
  - but hidden anatomic regions
  - and residual disease
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Cholesteatoma and retraction pockets

Hidden anatomic regions

Rétrotympanum

- Sinus tympani
  
  (posterior tympanotomy)

- Facial Recess
  
  (posterior tympanotomy, reaming of the posterior tympanal)

Anterior epitympanum (supratubal recess)

(wide atticotomy, antroatticomastoïdectomy, removal and relaying of the external canal Babighian 1992)
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Cholesteatoma and retraction pockets

- Hidden anatomic regions

**Posterior epitympanum** *(transmeatal approach)*

*(wide atticotomy, antroatticomastoidectomy, removal and relaying of the external canal Babighian 1992)*

Posterosuperior corner of the middle ear

*(wide posterior atticotomy, posterior tympanotomy with removal of the incus)*
Development of the additional otoendoscopy

Indications:
- hidden anatomic regions
- difficult local anatomic conditions

Additionnal otoendoscopy

- 350 patients:
  - cholesteatoma and uncontrollable retraction pockets
  - CWU (transmeatal and antroatticomastoidectomy approach) and CWD procedures

- Otomicroscopy and control with otoendoscopy

- peroperative residual disease
  - anatomic region (epitympanum, retrotympanum)
  - quality of removal under otoendoscopy

- residual cholesteatoma in the follow-up
Additionnal otoendoscopy

- No more CWD tympanoplasty nor posterior tympanotomy

- High rate of per operative residual disease (44% epitympanum and 76% retrotympanum) but high rate of transmeatal approach

- Residual disease in the follow-up:
  - Same frequency with or without otoendoscopy (literature)
  - But peroperative residual disease = residual disease in the follow-up

- Residual as a pearl ++ (easier removal)

- Better follow-up with CT-scan and MRI (region at risk)
Additionnal otoendoscopy

- Difficult anatomic conditions

19 year-old patient

- first stage tympanoplasty (cholesteatoma)

- second stage 12 months later

  (MRI with diffusion: normal)

- residual disease in the supratubal recess
- no conductive hearing loss
- malformation of the articulation between incus and stapes
- procidence of the tegmen tympani
- objective: canal wall-up tympanoplasty
Additionnal otoendoscopy

Difficult anatomic conditions

Primary otoendoscopy

Advance in the mini-invasive otology (transmeatal approach)

- Cholesteatoma and retraction pockets -

• Retrotympanum
  - procidence of the posterior tympanal
  - exposition to recess
  - dissection of the stapes
  - no posterior tympanotomy
  - no CWD tympanoplasty
  - value of the CT-scan (VII3 and monitoring)
Primary otoendoscopy

- Cholesteatoma and retraction pockets -

• Epitympanum
  • atticotomy (spontaneous or surgical)
  • removal of the incus and head of the malleus
  • limits:
    • aditus ad antrum (value of the pre-operative CT scan)
    • meningocele (pre-operative MRI)
    • intracranial extension (MRI)

Primary otoendoscopy

- Ear drum perforations -

Adipose graft.

An original option in myringoplasty
S. AYACHE, F. BRACCINI, F. FACON, JM. THOMASSIN
Otol Neurol 2003;24:158-64

Small perforations

« Champagne cork »
Primary otoendoscopy

- Ear drum perforations -

Myringoplasty (*temporal aponevrosis, perichondrium, cartilage*)

*No limit of size*
Primary otoendoscopy

- Ossiculoplasty -

With the stapes

- myringostapedopexy
- double cartilage
Primary otoendoscopy

- Ossiculoplasty -

With the stapes

- Partial prosthesis
  (no blood in the external auditory canal)

Without the stapes

- total prosthesis
Primary otoendoscopy

- limits of the procedure -

Diameter of the external auditory canal
- big procidence of the tympanal
- osteoma

Bleeding
- during the meatal flap dissection
- very reduced in the middle ear cavity
- no blood pressure variations (coordination with anaesthesists)
- non inflammatory ear