Otorinolaryngologie a chirurgie hlavy a krku

Foniatrie

Richard Lenert

Oto – rino - laryngologie

ORL - Základní obor

- Vzdělávání - základní kmen
- 2 roky do získání kmene
- 5 let do zvládnutí atestace
- Otologie
- Rinologie
- Laryngologie
- Foniatrie – nástavbový obor - 2 roky
- Hlas, Sluch, Řeč
- Audiologie

ORL

- Anatomie, fyziologie, patologie
- Symptomatologie
- Vyšetřovací metody a ošetření
- Speciální ORL:
- Nemoci – záněty, nádory, vývojové vady
- Traumatologie – poranění

ORL

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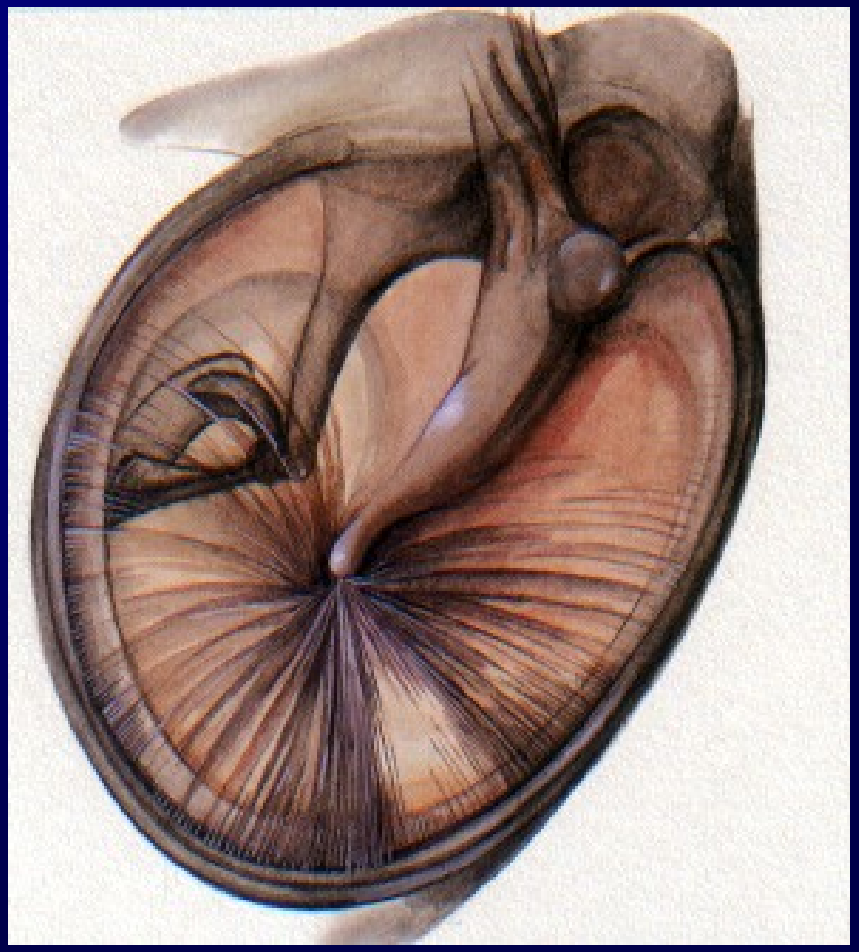
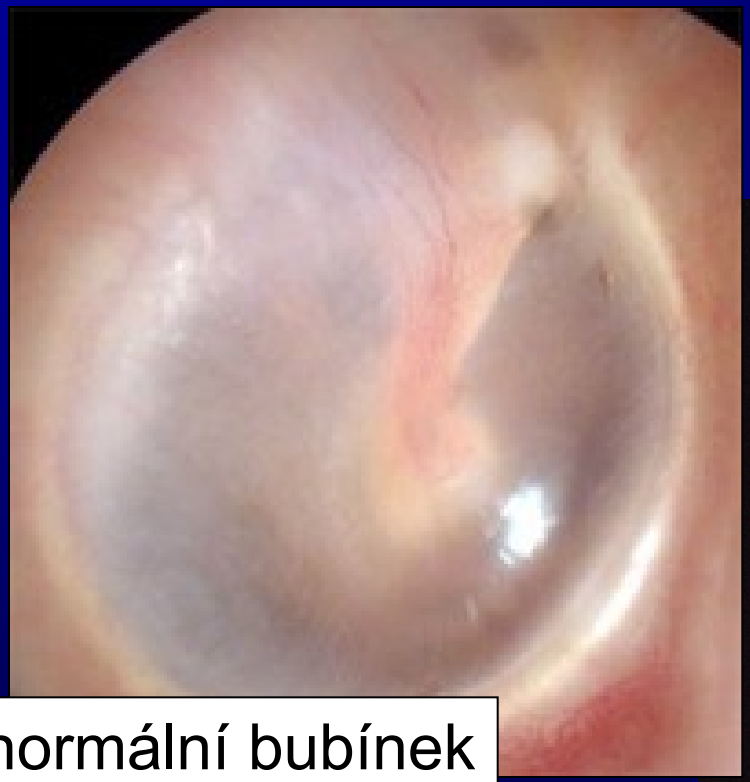
Retrakční kapsy

- **<u>Retrakce pars tensa</u> (klasifikace dle Sadeho)**
- **1.stupeň – mírná retrakce bez kontaktu bubínku s inkudostapediálním skloubením, prominence krátkého výběžku kladívka**
- **2. stupeň – kontakt bubínku s kovadlinkou nebo inkudostapediálním skloubením**
- **3. stupeň – kontakt bubínku s promontoriem bez fixace,**
- **4. stupeň - kontakt bubínku s promontoriem s fixací, adheze do sinus tympani**



OMA - diagnostika

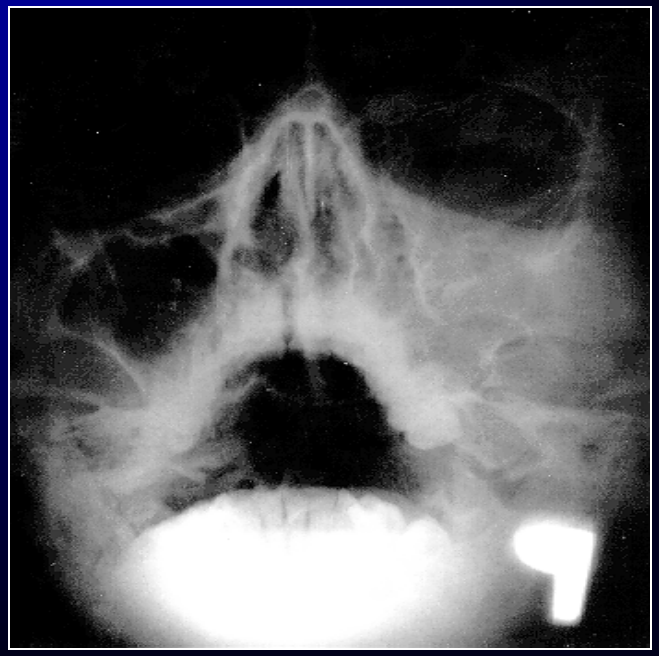


normální bubínek

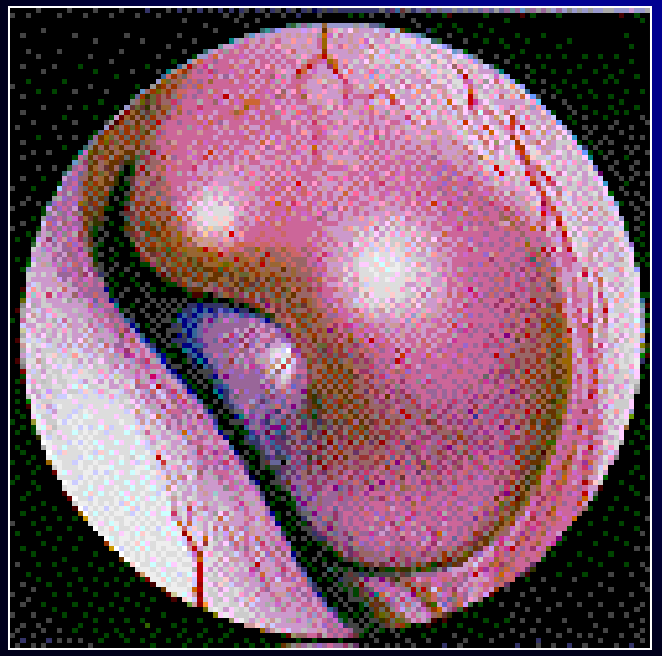
počínající zánět

dg

Sinusitis acuta

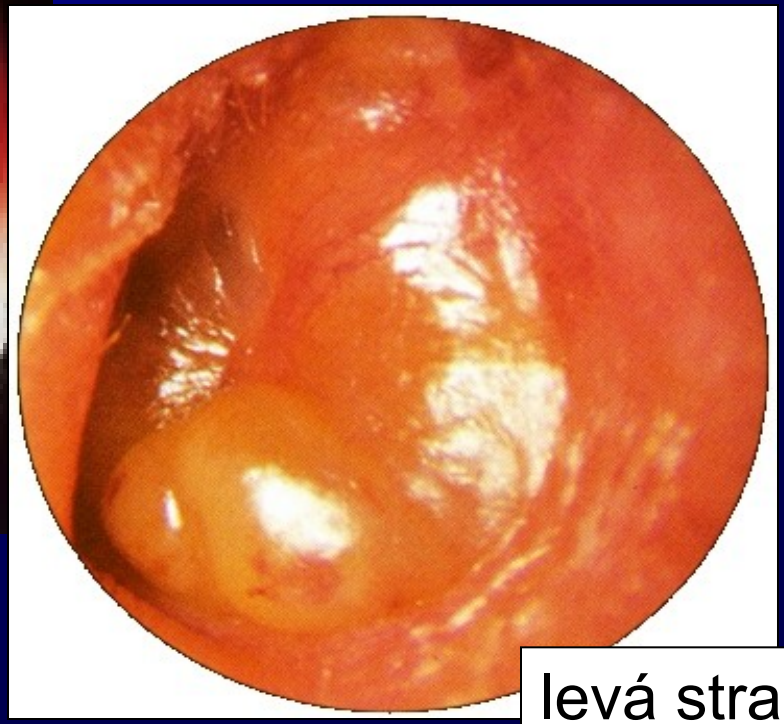


Otitis media acuta



OMA – vyklenutí bubínku

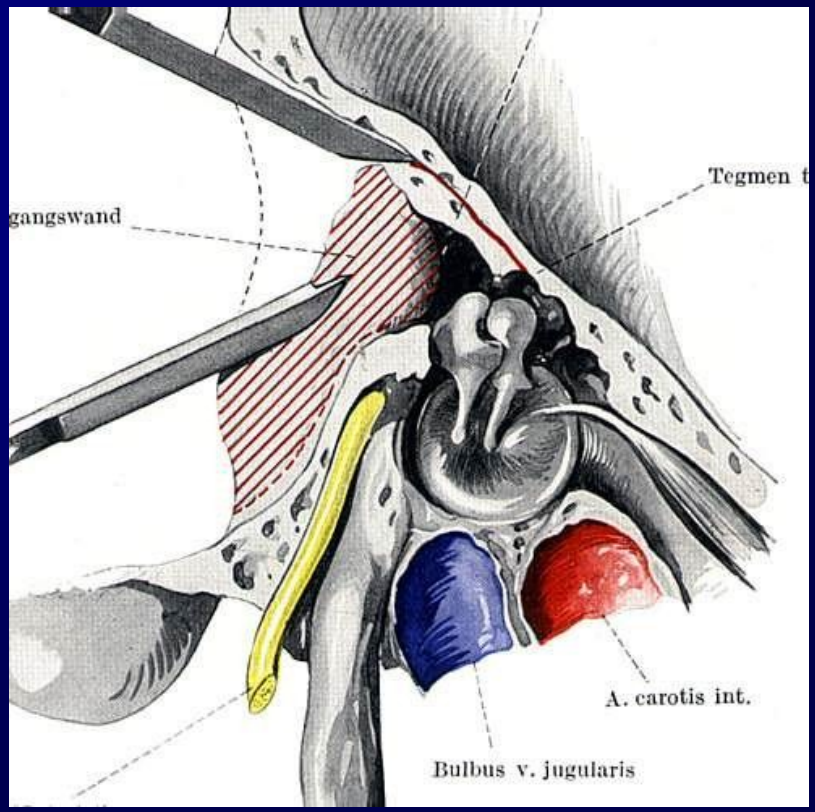
pravá strana



levá strana

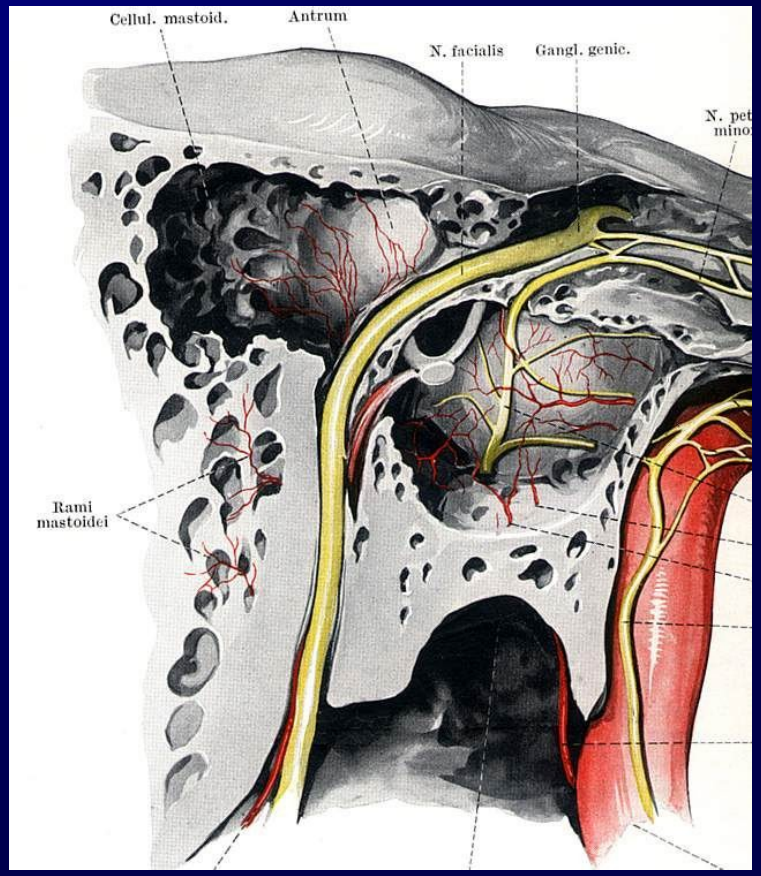
Anatomie

- AAT = Atikoantrotomie,
  PCI – perichondriumcartillage island technique – W – I 3
- zavřená technika CWU-
  Canal Wall Up, W II – interpozice, PORP,
  W III – kolumelizace, TORP 16
  primárně, sekundárně ?
  otevřená technika CWD –
  Canal Wall Down 6
- RO - Tympanomastoidektomie – radikální operace konzervativní, klasická
- RO - sekundárně zavřená 4
  CWD - otevřená 4
- bez rekonstrukce 3

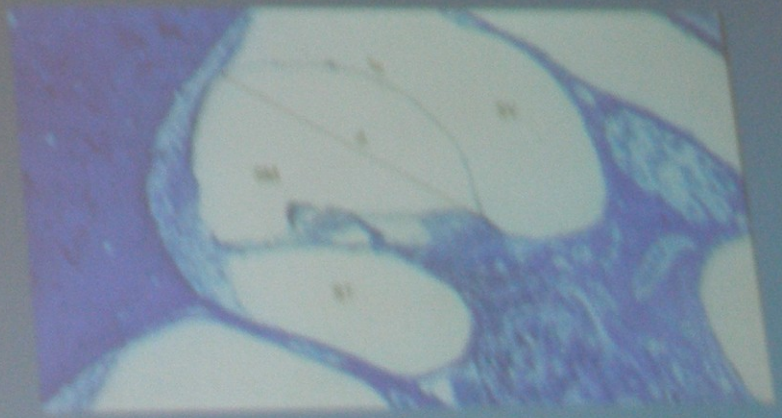


AAT

- anulus
- chorda tympani
- IS skloubení
- třmínek
- záměna okének
- obnažený lícní nervv
- „ztratit se v uchu“



M.Menieri audiometrie sledování !



- **def.** – idiopatické onemocnění vnitřního ucha spojené s poruchou mechanismu regulujícího produkci nebo resorbci endolymfy

  - fluktuující progredující vada v počátcích apikochlearní
  - tinnitus různý , koreluje s rozsahem postižení
  - porucha rovnováhy

Obnovení středoušní funkce

- základní úkol pro operatéra
- vytvoření celistvé blanky bubínkové dutiny
- zabezpečení převodu vibrací od blanky na některé z okének
- zabezpečení pneumatizace středoušní dutiny fyziologickým způsobem
- vytvoření uzavřené bubínkové dutiny s rekonstrukcí převodního systému

Sluch

- Zevní, střední, vnitřní ucho
- Cortiho orgán –sluchový receptor
- Basilární membrána – 30mm délka
- 16-20 000Kz
- Základní řečové frekvence -0,5 ,1, 2, 4 kHz
- Binaurální poslech – sumace vjemů z obou sluchovýách center
- Směrové slyšení

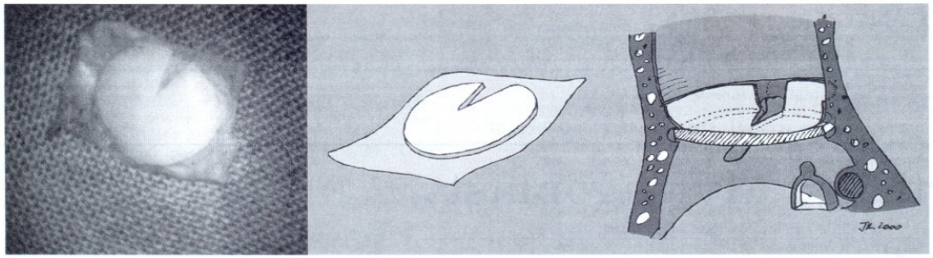


Fig. 1. Island transplant.

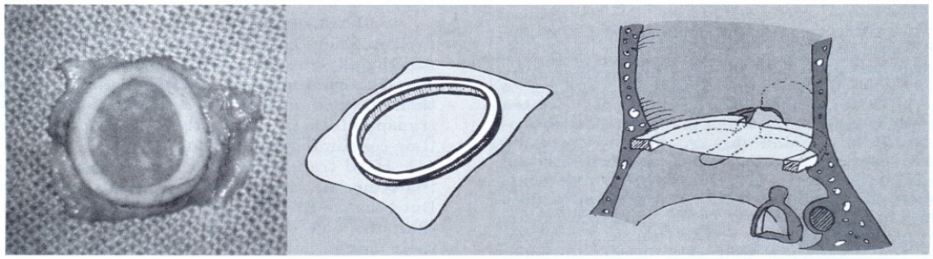


Fig. 2. Ring transplant.

on the inner side of tragus, approximately 2 mm to 3 mm from the outer edge. This procedure is very simple and esthetically harmless. The whole cartilage is removed, including the perichondrium on both sides. Later, the perichondrium, from the surface that will face the middle ear, is removed. When preparing the bed for the transplant, we usually remove the entire eardrum remnant, including the annulus fibrocartilagineus. The ear canal skin is elevated a few millimeters above sulcus tympanicus.

Island Cartilage Graft

Using a round, sharp tool (large ear speculum, corneal trephine, or distal edge of a metallic tracheal tube, in military hospitals a shell with a diameter of about 8 mm–9 mm), a circle is pressed and cut into the cartilage. The unneeded surrounding cartilage is removed. The desired result is a large piece of perichondrium with a round cartilage disc in the middle. In the area where the disc comes in contact with the handle of malleus, a narrow triangle is cut out. The adjusted transplant is easily inserted, replacing the tympanic membrane in such a way that the disc fits into the sulcus tympanicum and is supported by manubrium. The larger perichondrium layer is pressed and fixed to the bone of external ear canal and covered by skin. Gelfoam packing presses the skin and perichondrium to the bone laterally (Fig. 1).

Ring Transplant

As in the previous type of transplant, we remove tragal cartilage and perichondrium from one side. Again an 8 mm to 9 mm cartilage disc is formed the same way. Using a sharp instrument, we concentrically cut out the center of the disc in such a way that an approximately 1-mm wide cartilaginous ring is left. This ring functions as a frame to stretch a larger perichondrial layer. The cartilage ring should be adapted into

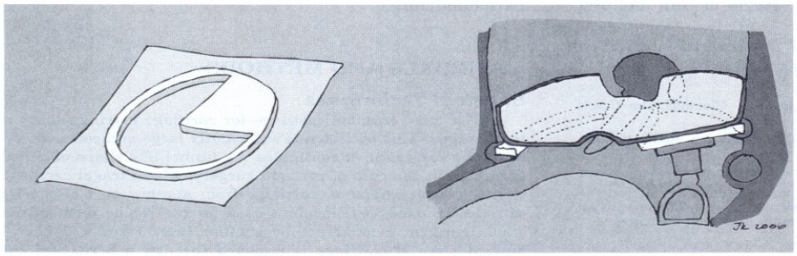


Fig. 3. Alternative shape of ring transplant.

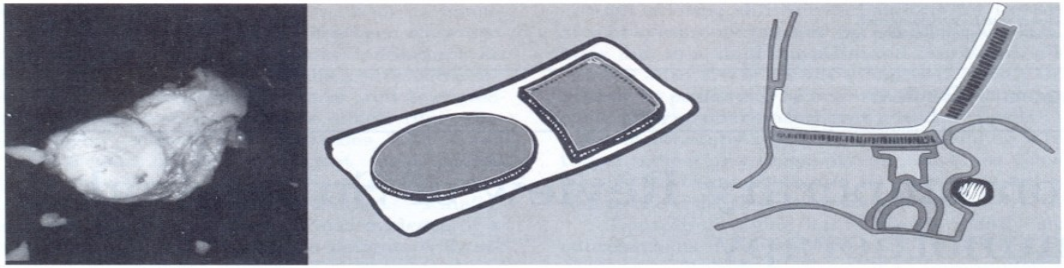


Fig. 4. Double island graft.

sulcus tympanicus over or under the handle of malleus. This transplant best imitates the look of a natural eardrum. The cartilage ring imitates the annulus fibrocartilagineus. Perichondrium is permanently stretched on the cartilage frame and is easily adapted to the desired place. The edges of the perichondrium are attached to the bone of the ear canal and covered with elevated skin (Fig. 2).

This shape of transplant can be changed in many ways. A piece of cartilage can be saved for contact with different types of total ossicular replacement prostheses and partial ossicular replacement prostheses (Fig. 3).

Double Island Graft

As in previous transplants, we use tragal cartilage and remove perichondrium from one side. As in the island graft transplant, 8 mm to 9 mm cartilage disc is created, but laterally on one side of the transplant, not in the center. We create another island from the rest of the cartilage. Both islands are fixed on the same perichondrium. This transplant is used for middle ear reconstruction with perforated eardrum and open mastoid cavity. The round disc replaces the eardrum and the other island reconstructs part of missed posterior canal wall. The large layer of perichondrium removed from one side of the transplant can also be very useful in this case, if the cartilage is not sufficient enough to close the whole defect of the posterior meatal wall (Fig. 4).

RESULTS

We have been using cartilage transplants at the ear, nose, and throat clinic of the teaching hospital in Olomouc, the Czech Republic, for more than 15 years. During this time we have performed more than 7,000 cartilage myringoplasties and have developed variations of this operation. A few of them are presented in this paper. The aim of this paper is not to discuss surgical results, but rather to demonstrate the different options regarding how to use cartilage grafts. As mentioned previously, the success rate of such myringoplasties is between 90% and 95%. The success rate depends mostly on middle ear conditions at the time of the operation and on the skills and experience of the surgeon, regardless of the material used as a graft, that being either cartilage or soft transplants (fascia and perichondrium). Audiologic results after operations are similar. The main benefit of the cartilage transplants is that working with this tissue is easier than with softer material.

DISCUSSION AND CONCLUSION

The most important condition for a successful anatomical healing after a myringoplasty is immobility of the transplant during the early stage of the healing process. Every movement of the graft during the first days after the transplantation is destructive and slows down the process of healing. Stiff cartilaginous transplants have a lower tendency to be affected by pressure changes that occur in the middle ear and the external ear canal. Choosing the graft's correct size and proper adaptation eliminate any movements. The edges of the cartilage are firmly anchored in sulcus tympanicus. Cartilaginous transplants that replace the entire tympanic membrane require more extensive and radical work to prepare the bed for the transplant. But it is easier to work with this kind of transplant in comparison with soft tissue such as fascia or perichondrium. Based on our research,[5] we have found that the acoustic characteristics of the hard transplants are comparable with soft transplants. The same results were also confirmed by other authors.[1,4] Middle ear surgery can be very creative and interesting, and I believe that further new innovations or variations will be developed soon.

BIBLIOGRAPHY

1. Milewski, C. Composite graft tympanoplasty in the treatment of ears with advanced middle ear pathology. *Laryngoscope* 1993;103:1352–1356.
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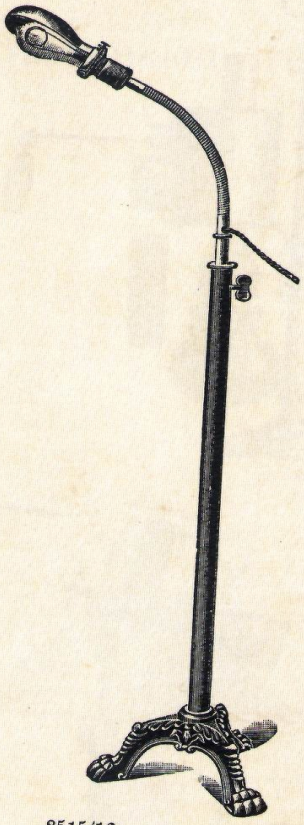
3. Dornhoffer, J. Cartilage tympanoplasty: indications, techniques and outcomes in 1000 patient series. *Laryngoscope* 2003;113:1844–1856.
4. Milewski, C. Results of tympanoplasty following application of cartilage-perichondrium transplants for tympanic membrane substitution under unfavorable circumstances [in German]. *Laryngorhinootologie* 1991;70:402–404.
5. Klacansky J, Kucera, J, Starek, I. Rekonstrukcia blanky bubienka chrupkovymi transplantatmi. *Otorinolaryngol (Prague)* 1998;47:59–63.



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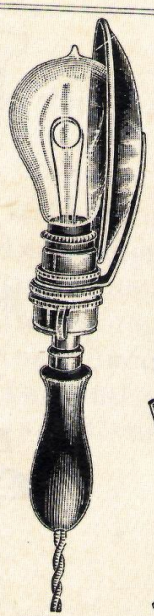

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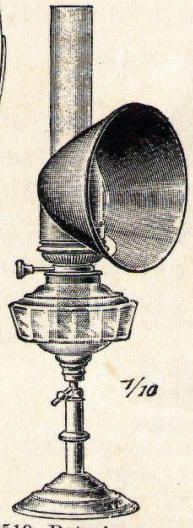

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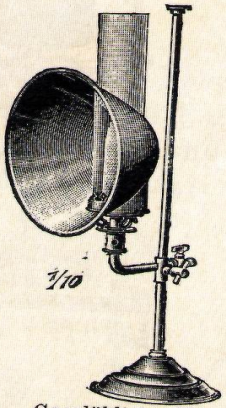

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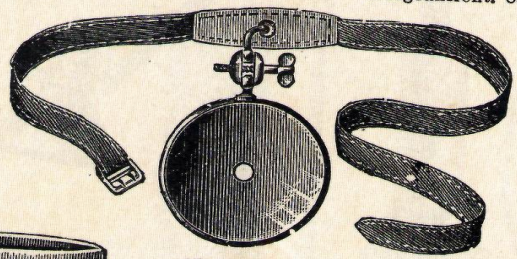

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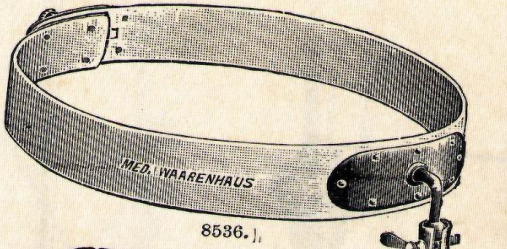

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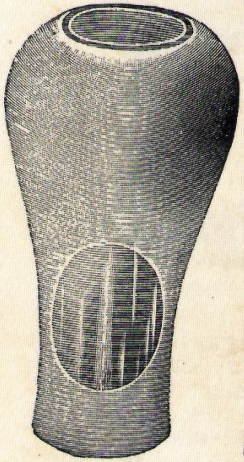

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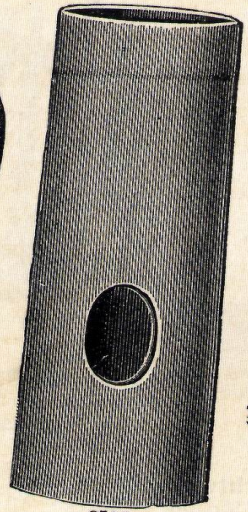

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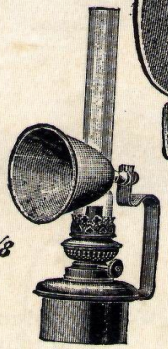

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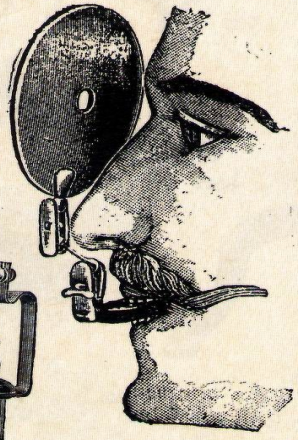

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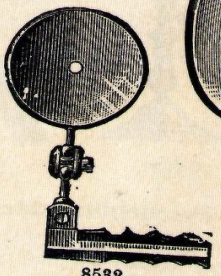

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*8515 **Tisch-Beleuchtungslampe** mit biegsamem Schaft

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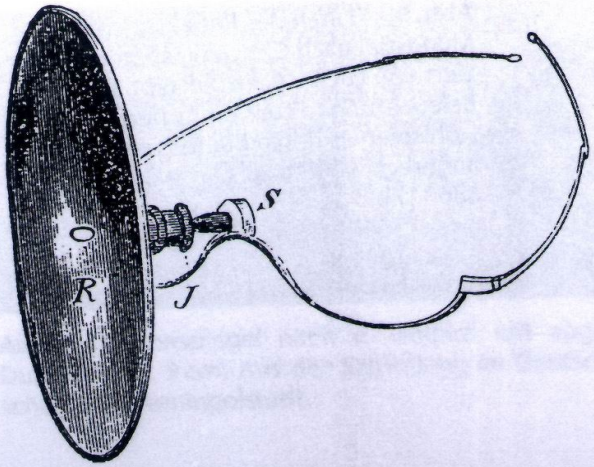

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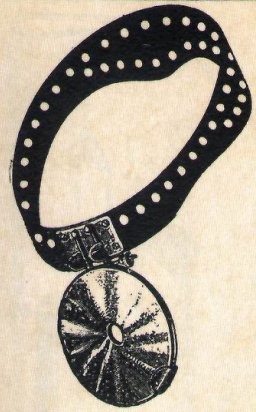

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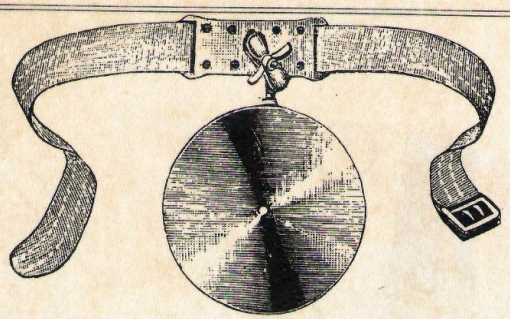

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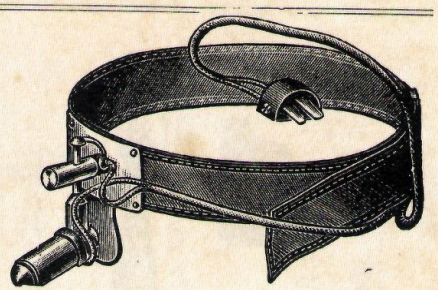

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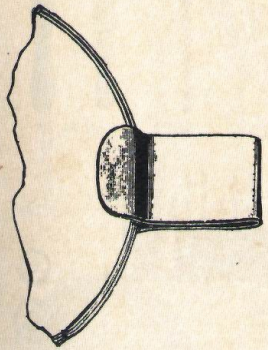

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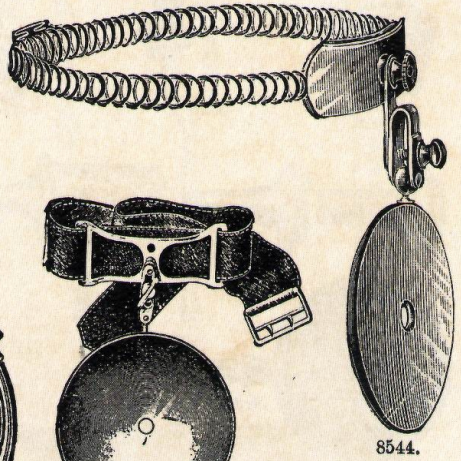

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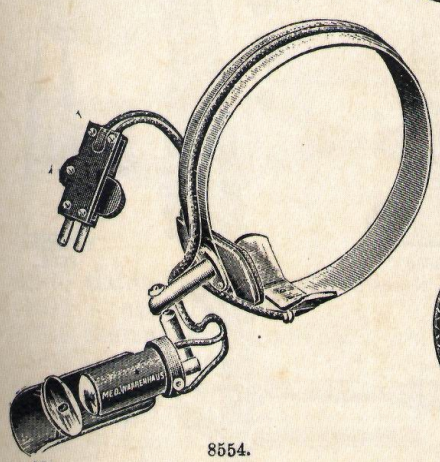

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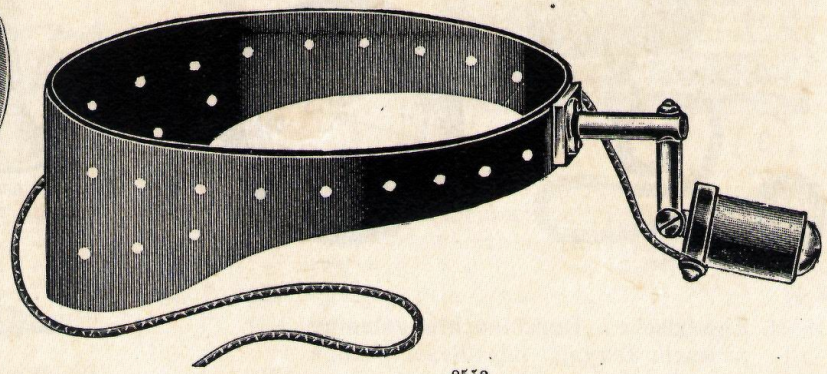

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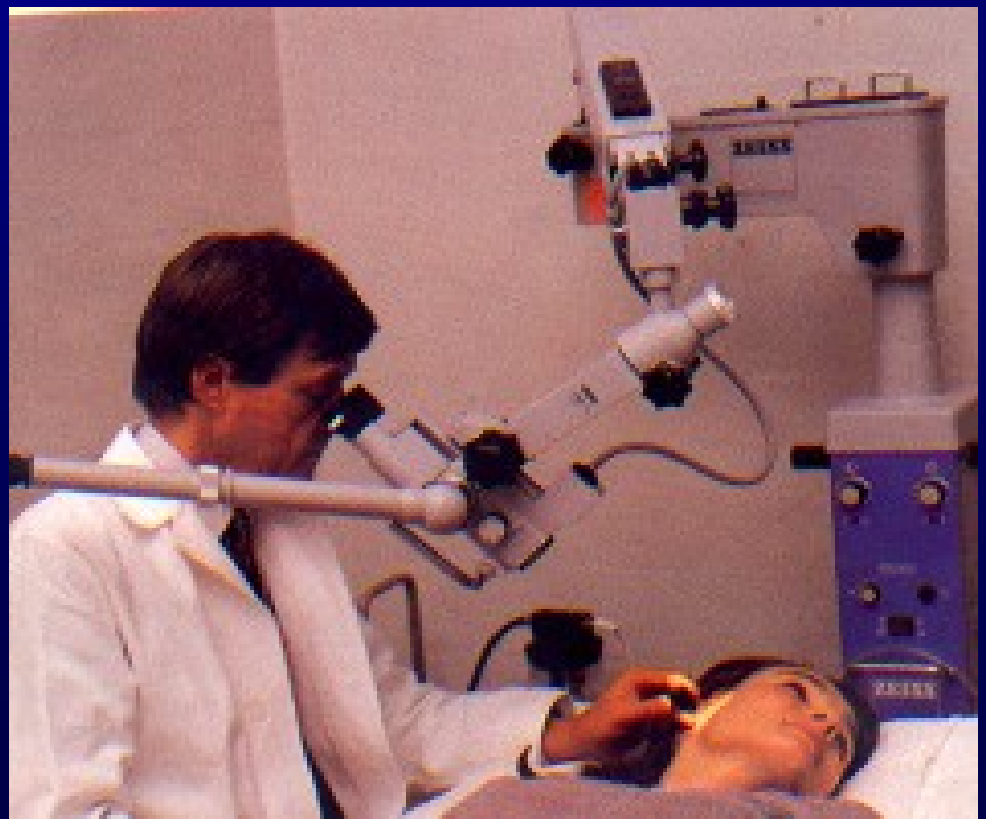
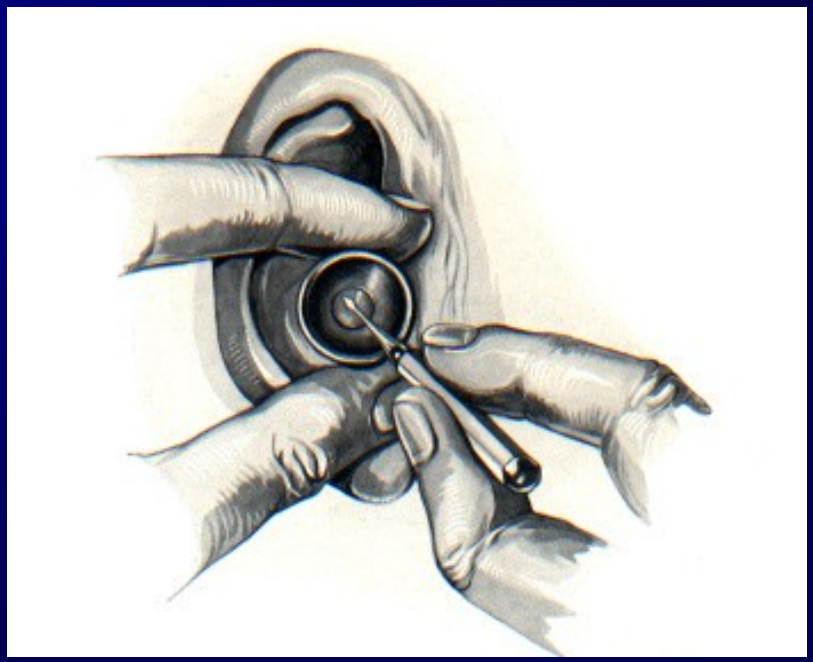
Vyšetření



- **Diagnostika**
- **otomikroskopie**
- **tympanometrie+SR**
- **ladičky**
- **audiometrie**
- **kalorizace**

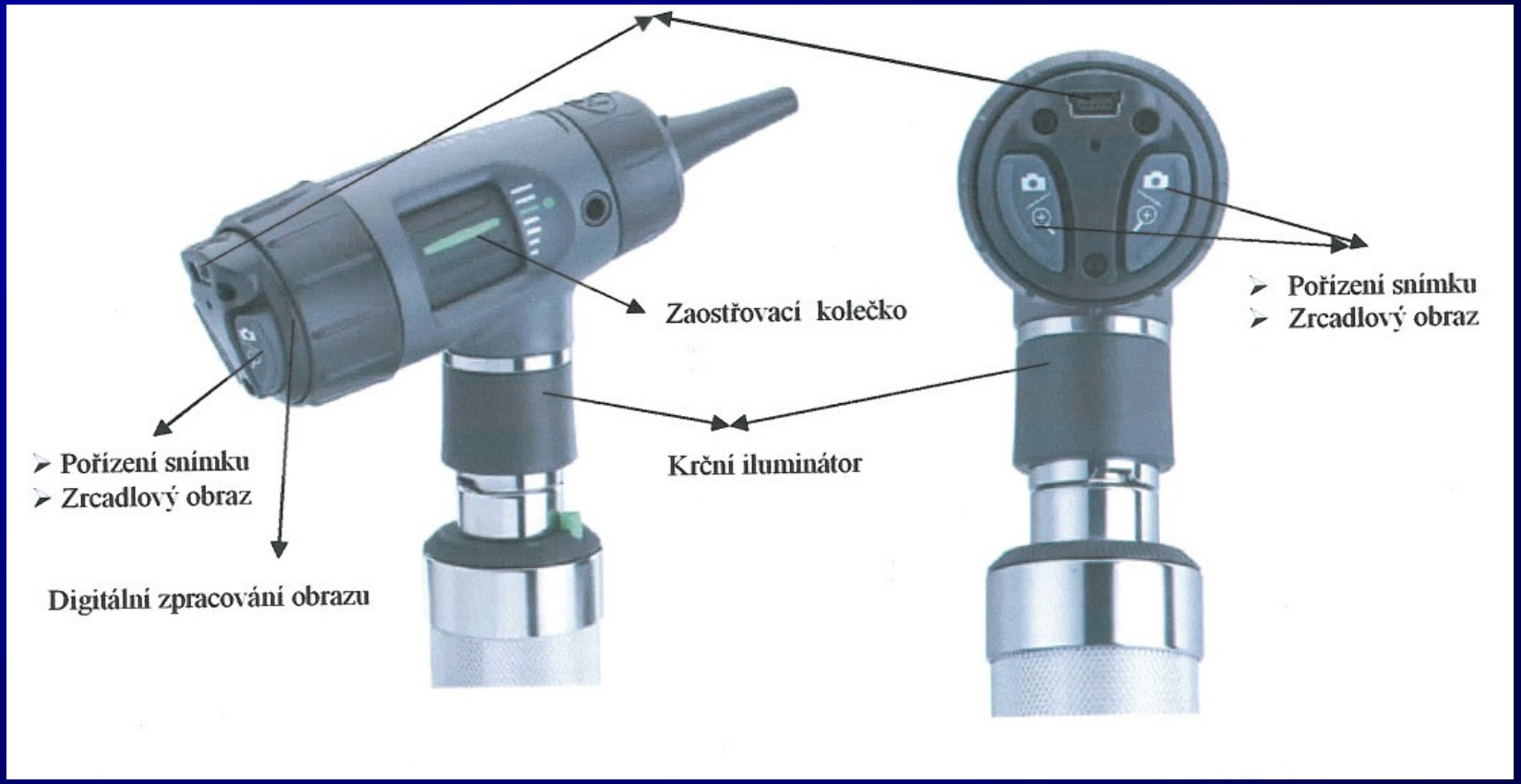
Vývoj léčby otitidy

- **paracentéza**
- **myringotomie**
- **tympanocentéza**



Vývoj léčby otitidy

- paracentéza
- zadní dolní kvadrant
- ve tvaru písmene J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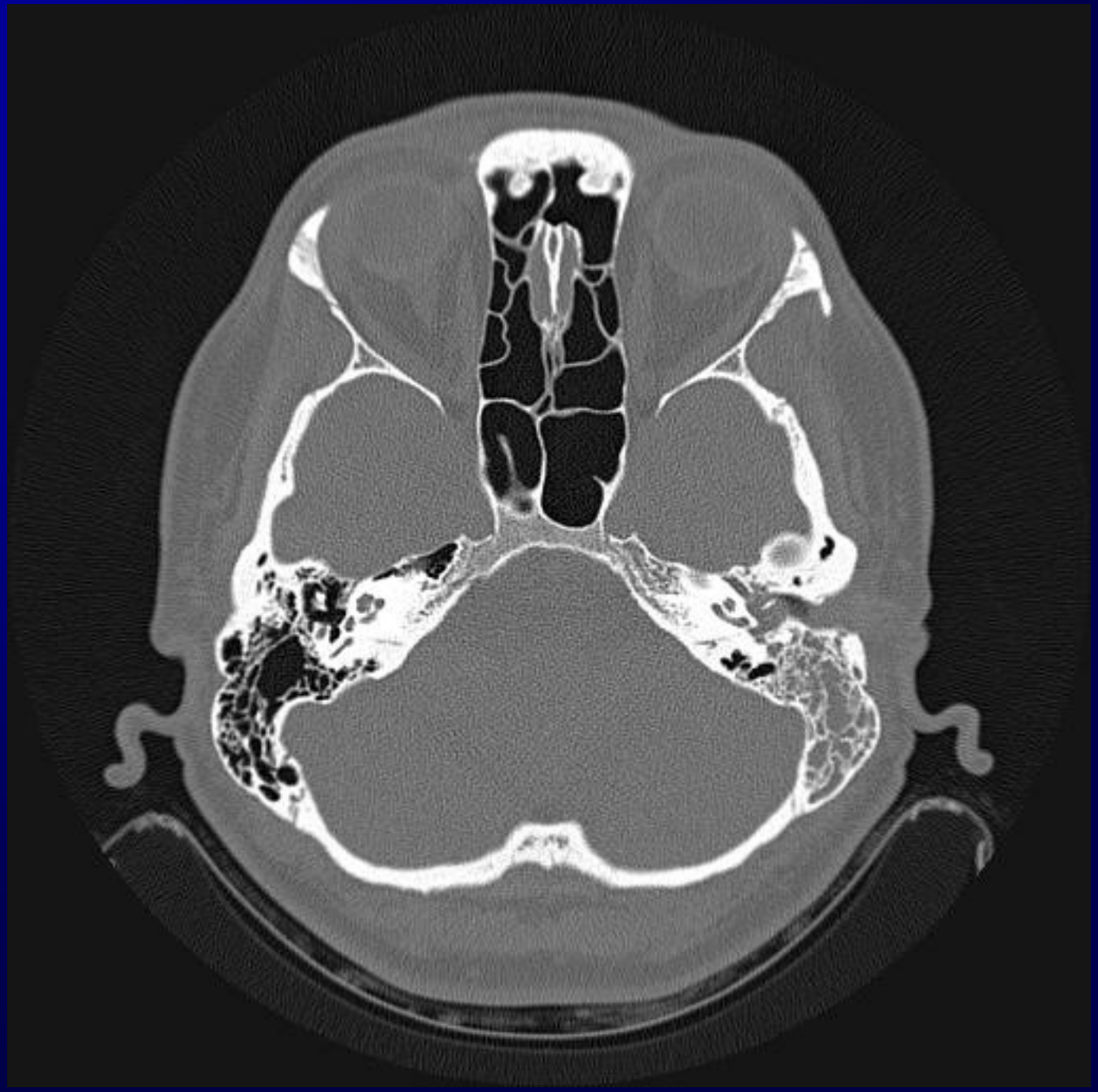


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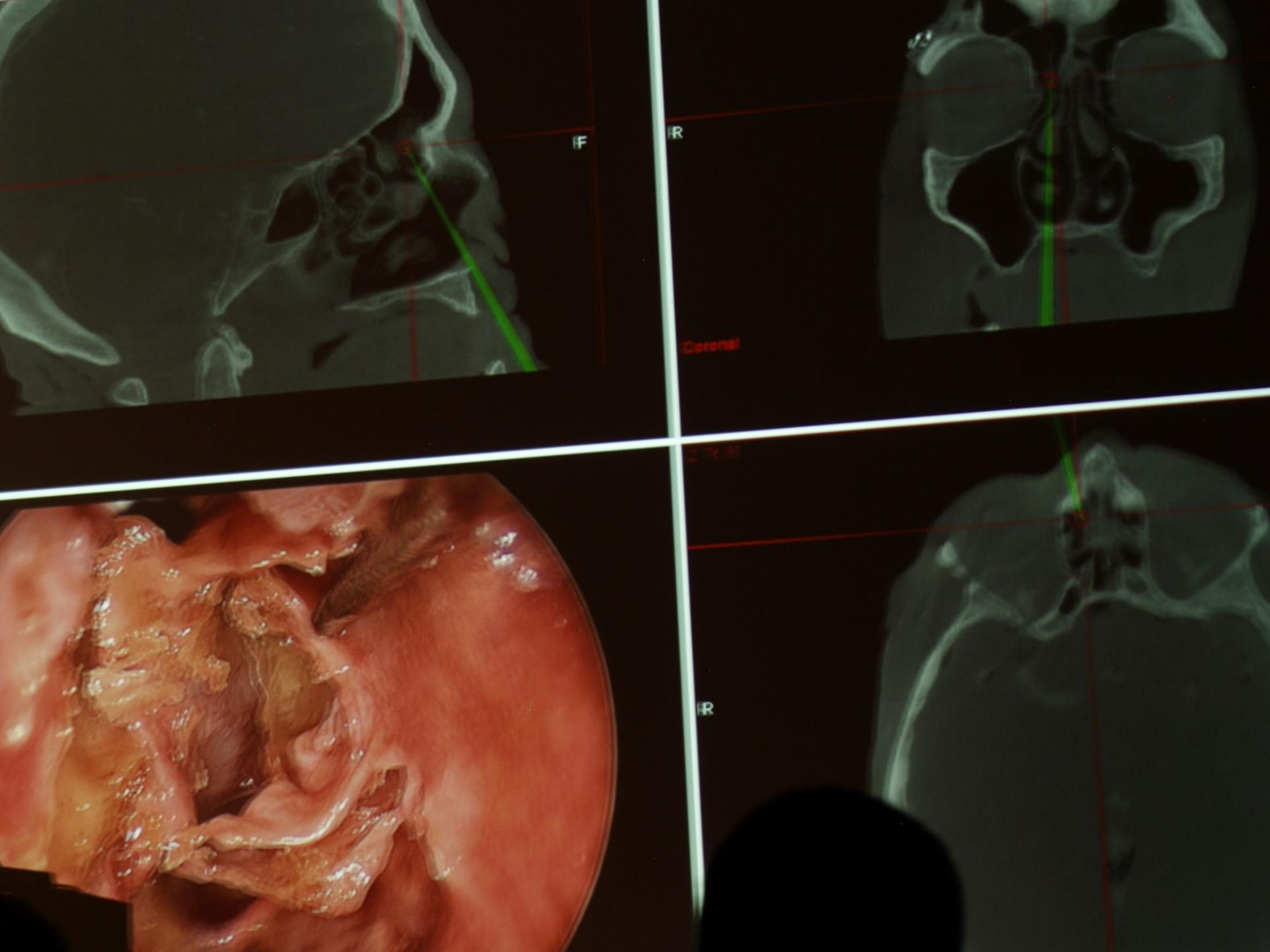
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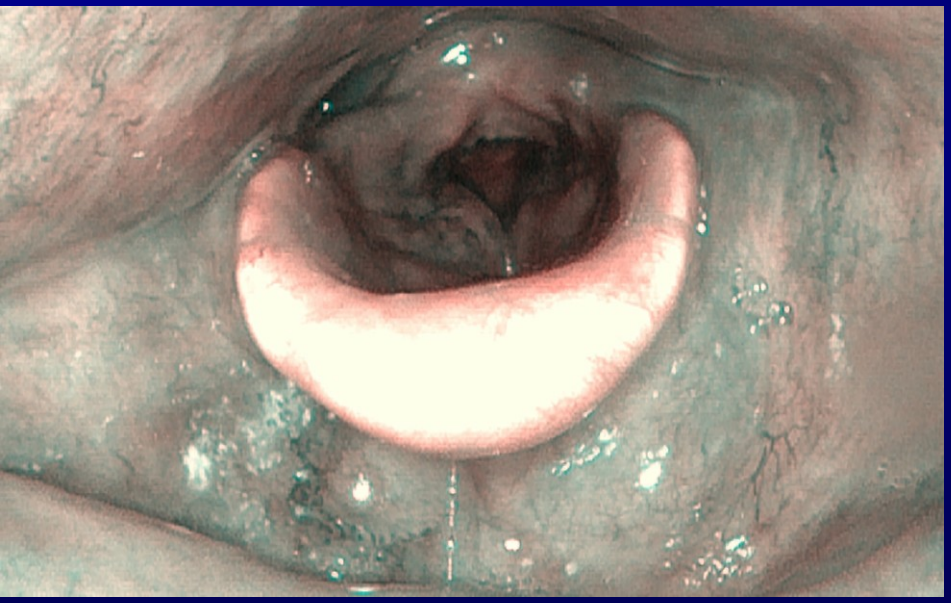
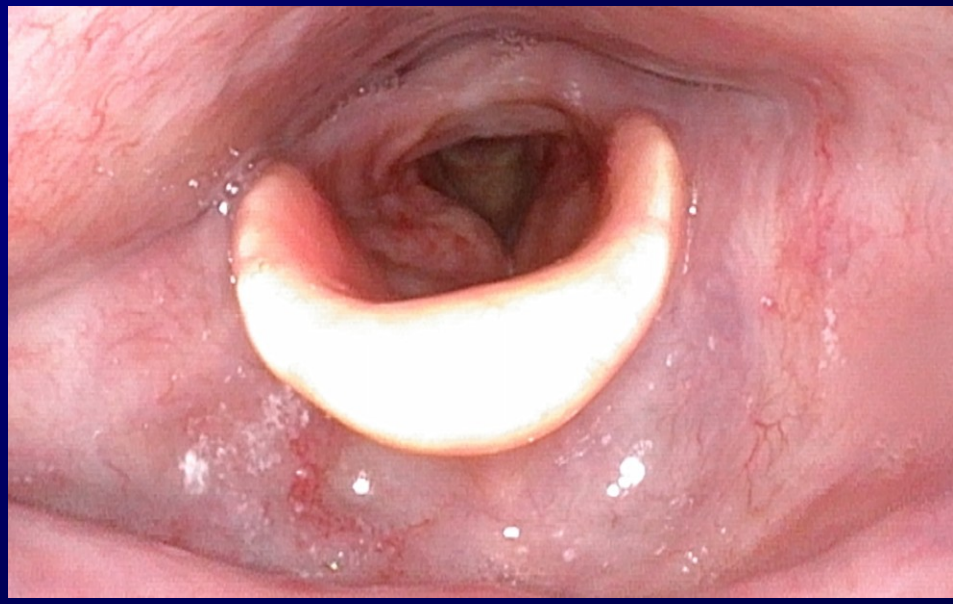
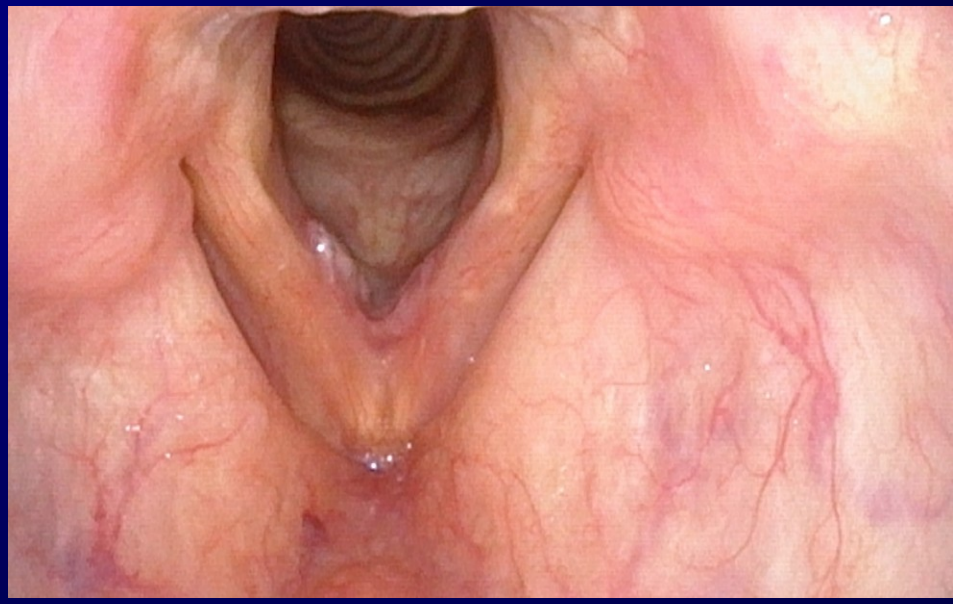
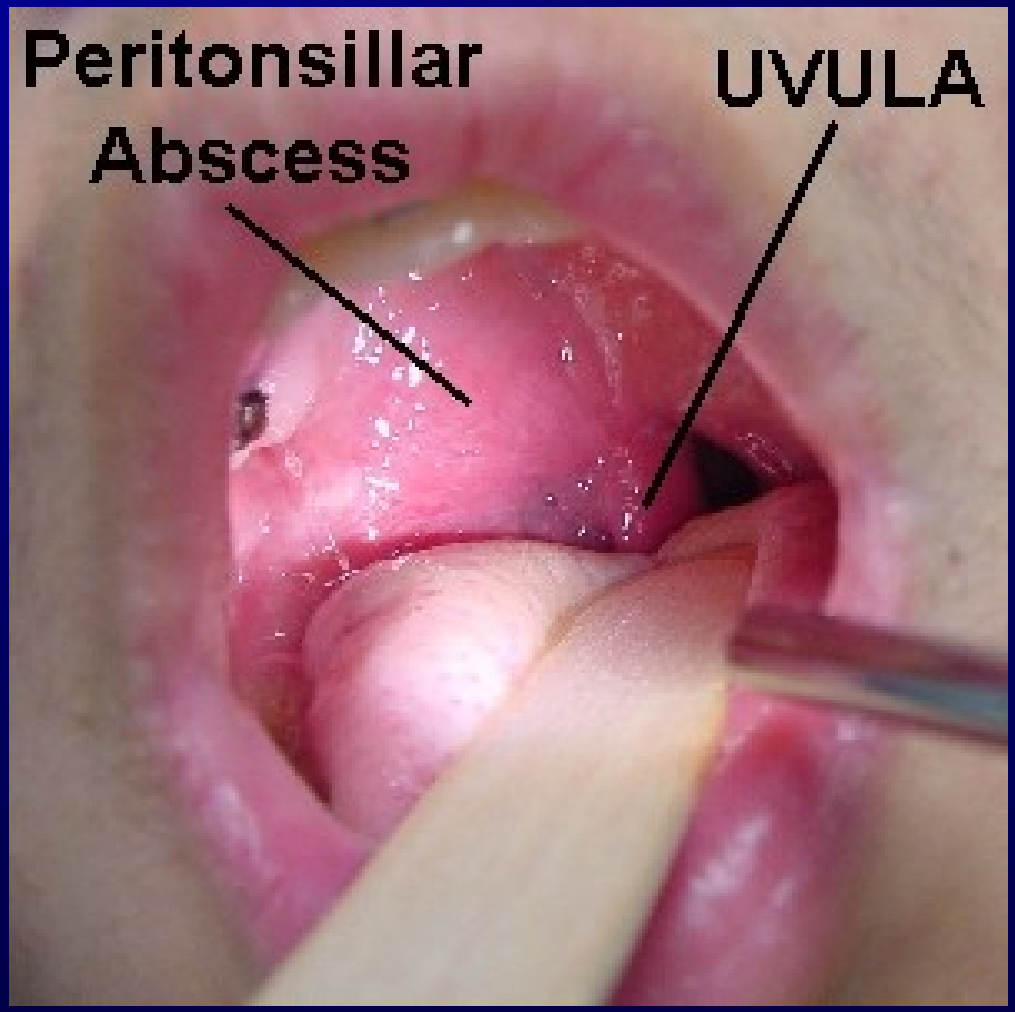




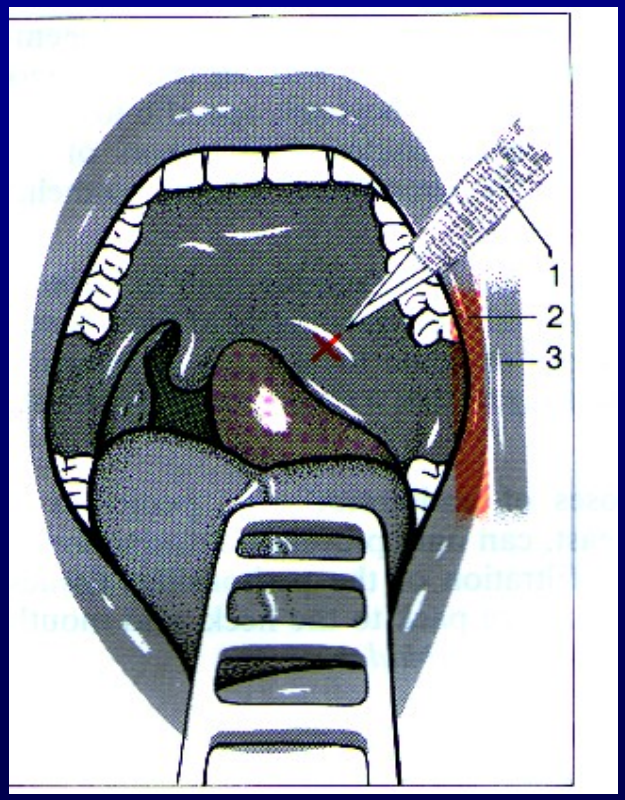
NBI



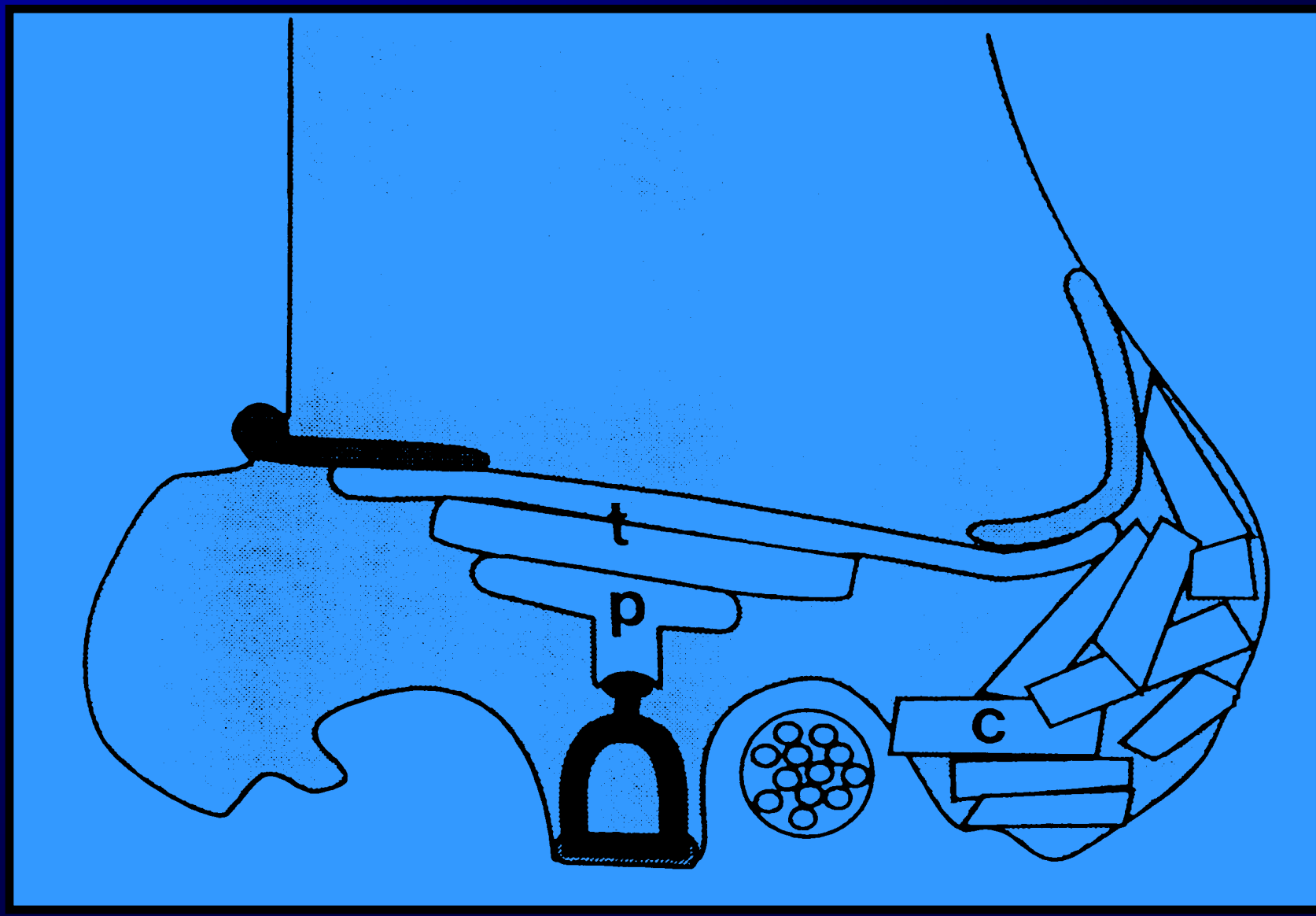
Peritonzilární absces vpravo



Diagnostika



- Lokální nález oropharyngu
- Probatorní punkce
- Paraklinická vyšetření – laboratorní známky zánětu CRP, FW, KO - leukocyty, prokalcitonin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