

## Meatoplasty of the ear canal, speaker text and figure

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<http://www.youtube.com/watch?v=F3DJwOTzpvo>

1. Every otolaryngologist has a number of patients with narrow ear canals. This film describes a technique which is suitable for enlargement of the cartilaginous portion of the ear canal. Patients may have itching, draining or collapsing ear canals and they frequently visit their ENT-doctor or GP. Underlying diagnoses are typically stenosis after mastoidectomy, myringitis, radical cavities or mild congenital stenoses. The described method is useful when little or no drilling is anticipated and middle ear surgery is not planned.

A large ear canal contains more skin than a narrow one. Thus, skin must be added, some cartilage and all fat be removed. Three flaps are formed during the operation. Two of these form a Z where flap shift is performed. By doing so, skin is added and circular scars avoided.

3. These ear canals are difficult to clean . Preoperative frequent cleanings are essential. Antibiotic prophylaxis is recommended in draining radical cavities. Alcohol on gauze is the best method during surgery. In an awake patient, a small gauze with ointment can be laid on the tympanic membrane to reduce suction noise.

3b. Start with local anaesthesia behind the ear, continue in the concha and finally inject in the ear canal. The fluid can lift the skin from the cartilage in places.

4. This is a left ear, so we make a C-formed incision from 12 to 5. The incision line should be as anteriorly as possible. Often you have to shift hands. Then a counterincision is made. A longer incision means easier access.

Lift the skin from the cartilage. A lower skin flap is prepared with scissors and a scalpel.

Then an upper flap is formed in a similar manner. Continue until both flaps are freed properly, especially the upper one.

5. The anterior parts of these flaps must be raised with a scalpel. Normally, surgery can be carried out under local anaesthesia, and with a surgical headlight, but this patient insisted on general anaesthesia. I usually do not use a microscope, just reading glasses for close range vision.

6. Now it is time to start preparing the inner flap. Keep the skin thin since that can not easily be corrected later. If you are in a radical cavity, be prepared that the ear canal bends posteriorly here.

7. Here we see the incision that really opens up the ear canal and makes it possible to see the tympanic membrane. Continue the incision until you reach the bone. Avoid cutting hard against the bone. One of my patients got a neuralgia, probably since the auriculotemporal nerve was damaged. If necessary, you may reduce bone tags with a curet or drill once the inner flap has been mobilized into the bony part of the ear canal.

8. Reduce cartilage, about 12 mms, and remove all fat down to the bone. The fat may recur later whereas the cartilage will certainly not, thereby leaving the ear canal defenseless. Sometimes you need to remove parts of the helix.

9. Continue down to the bone – and protect the inner flap at all times. In the posterior and upper part of the operation field most of the space can be gained and you have to individualize for each ear here.

10. Now is the time to check if we are ready. As you can see, there is a little adhesion left in the superior part of the inner flap, so we cut that and try to free the inner flap as much as possible. Now you see that it comes out easily.

As the inner flap is now sutured out, the upper flap will fall into place. This flap shift is actually easier to perform than to describe – so just do it. Start with a hold suture. Avoid pulling too tight, or the entire ear will be pulled forward.

11. The innermost suture for the upper flap is difficult to set. A very curved needle is necessary. Ethilon on a C2-needle is one good alternative. Start in the superior part of the ear canal – and then you meet the anterior part of the upper flap. Then the flap shift is completed.

14. If you encounter difficulties to set the inner suture, it is probably because you did not open up the ear canal enough. As you can see, the entire eardrum is now exposed. You continue to adapt all incision lines. There will be formed a Y in the outer part of the ear canal and that is of course a weak spot but it usually heals well. Subcutaneous sutures are not used.

12. The lower flap can be rounded off with a scissors, and just be sutured back. It is not utilized during the flap shift procedure.

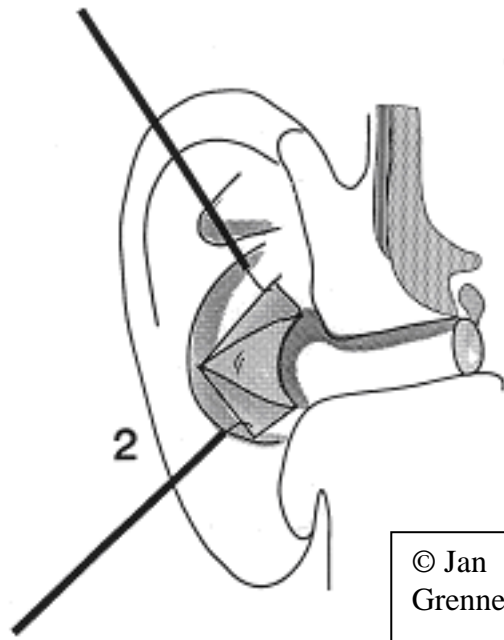
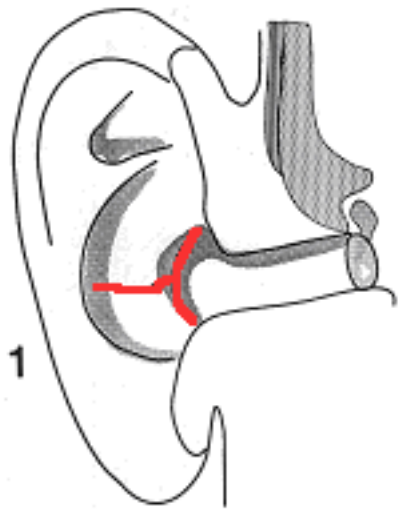
13. Protect the sutures with Steristrips. The ear bandage is prepared from ointment and gauze. In case of a postoperative bleeding, compression is recommended but the bandage can be left in place.

The patient is encouraged to remove all gauze three days after surgery. This will reduce itching and reduce the risk of infection if the ear was a draining one. It also gives an opportunity to use ear drops, if desired. Protect the ear with a sports type headband at night and outdoors. Take sutures after 7-10 days.

A draining radical cavity can be expected to dry out progressively during a 6-month period after surgery.

I mentioned a neuralgia as one possible complication. A few patients with draining ears have had postoperative infections that could be managed by antibiotics and outpatient visits. In all, I have performed 140 of these operations. To my knowledge, only my first patient had a recurrence of the stenosis, from fat bulging into the ear canal. Since I became more radical with fat removal, the results are satisfactory with improvements or cure in virtually all patients.

Thank you for your attention and good luck!



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