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EDITORIAL

CANALOPLASTY

It is a procedure to widen the external auditory canal by removing all overhangs lateral to tympanic annulus as to become an inverted cone. It is performed in exostosis resulting in cholesteatoma of external auditory canal and retention of cerumen.

Canaloplasty is a part of repair in congenital aural atresia, or otoplasty.with the widening of surgical horizon of otolaryngologist to head and neck surgeon, plastic surgery has become an area of interest, some time independent and at times with plastic surgeons.

The secret of success of procedure is in preservation of canal skin and to do so, canal is widened in parts.

There are various routes, post aural, end aural or Tran's canal author prefers an end aural approach. As usual end aural incision is given.

The incision for Canaloplasty is given from 6oc to12oc position from the outer or lateral margin of exostosis or bony hump and medially unto annulus margin. Canal skin is elevated as in tympanotomy /stapedectomy, taking care of canal skin; every bit of canal skin should be preserved. Suction should be used only on bony wall or on a perforated circular knife .Rotation of burr should always be away from elevated flap. In cases of fibrous stenosis /ch otitis media we are not bothered to prevent canal skin but canal skin has to be removed.

A ledge of bone is left just lateral to annulus/ skin flap which will prevent the flap getting trapped in rotating burr; simultaneously silastic sheet/xray film/aluminum foil from suture may be placed over the elevated skin flap.

In cases of fibrotic stenosis where tympanic membrane is thick lusterless superficial layer is gently peeled off all around but fibrous middle layer has to be preserved.

After widening the posterior canal wall, another incision is given from 12oc to 6oc on the anterior canal wall. Canal skin is elevated as of posterior canal up to annulus. The canal skin of anterior canal lateral to is elevated laterally/ outward aexostosisnd placed under the anterioly placed retractor prong.

Drilling should always be done away from skin flap or the tissue surgeon wants to protect. Avoid injury or exposure to temporomandibular joint, pinkish gray colour is visible through the to identify it.

The ledge of bone all around annulus is removed and no angle should be left where keratin may accumulate. The canal skin is reposited; sometime vertical cuts may be required for better approximation...

Canaloplasty is performed in cases of chronic otitis externa where medical treatment fails to resolve or hearing loss is more than 20Db. It is preferable to do it with maetoplasty. Canal skin

as being infected is always removed and thirsch skin graft is placed.

Atresia of external auditory canal

It results from failed or aborted development, usually unilateral and associated with other congenital anomalies of ear, more common in hearing loss. Selection of case is important, one must assess preoperatively how much hearing improvement is anticipated, if not bone conduction hearing aid or bone anchored hearing aid may be advised.

Before proceeding to surgery reassessment of hearing and tuning fork testing is mandatory. There may be total or severe sensoneural hearing loss in anatomically normal ear. H R C T SCAN must show normal inner ear, A ear suggesting cochlear function, oval window with stapes, normal course of facial nerve is a good case to operate,

Fig. 1 Anterior canal wall lump

facial nerve lying over the oval window is difficult to tackle Reconstruction of auricle is performed first followed by tympanoplasty or canaloplasty.

Surgical technique

Endotracheal anesthesia is given; patient is put in supine position with head turned away to surgeon. Muscle relaxants are usually not given when facial nerve monitoring is done.

Standard end aural incision is given as in myringoplasty. The surface marking of epitympanum is below temporal line behind the temporomandibular joint. The drilling begins at the attic. Middle fossa dura is skeletonized, remember skeletonizing means always leaving an egg shell bone over the structure. The atretic plate of bone is drilled away, taking care of ossicles.The drilling proceeds anteromedialy avoiding unnecessary opening of mastoid air cells. An effort is made to create wide anterior canal wall, preferably more than two mm anterior to ossicles .While drilling anterior canal wall all precaution must be taken not to expose temporomandibular joint, and author prefers doing all work with diamond drill around ossicles and joint. heat generated by diamond drill is tremendous hence profuse irrigation should be used, always keep the direction of rotation of burr away from vital structure and to prevent injury suction tip may be placed over the structure you want to save. On completion of skelotonization

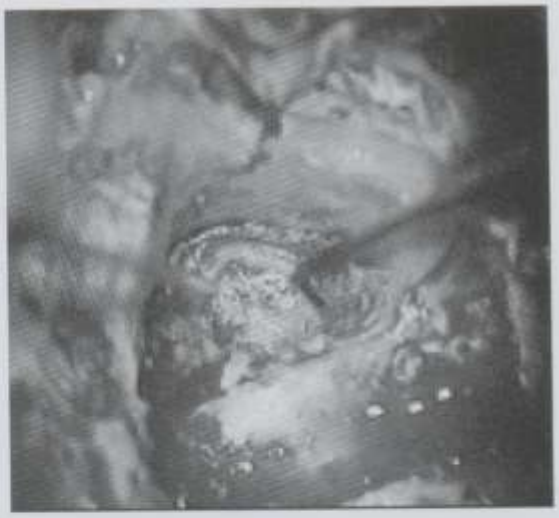

Fig. 2 Wide anterial canal wall Canaloplasty done

bone becomes permeable, transparent, underneath structure is partially visible and sound of drilling changes from low pitch to high pitch. An attempt is made to create a 10mm diameter external auditory canal. Facial nerve is usually displaced anteriorly and laterally in vertical segment hence while drilling in this area surgeon has to be extra cautious and facial nerve monitoring is mandatory. If electrocautery is must assistant should palpate the face manually.

Atretic bone is drilled in the end. A gel film or

silastic sheet is placed between ossicles and canal wall to prevent refixation. A new tympanic sulcus is created. Skin graft 0.2mmthick partial thickness is procured from medial aspect of upper arm. Skin graft is placed on sufratulle and spread evenly. Graft is cut into multiple pieces along with sofratulle for placement in canal.

Nitrous oxide is withdrawn well in advance as it dissipates in middle ear as bubbles which may dislodge/displace the temporal fascia graft...

Three to four holes are made by drill at the lateral end of newly created canal 4/0 vicoryl suture is passed through them. The skin grafts are anchored to canal by these suture and canal is furthered gently packed with sofratulle pack. End aural incision is closed as usual by interrupted silk sutures. Maetoplasty is usually performed for better results. Wound is checked frequently but not disturbed for minimum ten days until gross infection is observed. Between 10th to 14th days all sutures are removed and all secretions are sucked out. Care of the canal is mandatory for some time. Chemical cautery naddressing with ointment is strongly recommended otherwise restenosis may develop..

Results are explained to attendants in writing oth for hearing as well as cosmetically. Results are encouraging cosmetically but in terms of hearing improvement unto 30 dB hearing gain is expected in 60% cases in experienced hands. IF patient or attendants are not convinced thoroughly BAHA should be advised specifically in bilateral cases.

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