Tympanoplasty: Repair of Ear Drum Perforation

Perforations of the eardrum, or tympanic membrane, can occur as a result of infections or trauma. Small perforations often heal on their own, but large perforations may require surgical repair. Surgery to reconstruct the tympanic membrane (tympanoplasty) is usually performed under general anesthesia.

The operating microscope helps to enlarge the view of the ear structures, giving a more detailed image to the ear surgeon. For small perforations, incisions are made into the ear canal and the remaining eardrum is elevated away from the bony ear canal and lifted forward.

If the perforation is very large or if the hole is difficult to see due to its location or the shape of the ear canal, it may be necessary to make an incision behind the ear. This elevates the entire outer ear forward, gaining access to the perforation. Once the hole is exposed fully, the perforated remnant is rotated forward, and the ossicles, or bones of hearing, are inspected. There may be scar tissue and bands surrounding the ossicles, which can be removed.

Tissue is taken either from the back of the ear or from a separate small incision in the hairline. The tissues are thinned and dried. An absorbable gelatin sponge is placed under the drum to allow for support of the graft. The graft is then inserted underneath the remaining drum remnant and the drum remnant is folded back onto the perforation to provide closure. Packing material is then placed on top of the graft to hold it in position.
If opened from behind, the ear is then stitched together. A dressing is then placed over the ear.

After about one week, the packing is removed. It is important to keep water away from the ear and to avoid nose blowing and strenuous exercise. Most individuals can return to work after two to three days. In over 90 percent of cases, the tympanoplasty procedure is successful and a hearing test is performed at four to six weeks after the operation.

Failure of tympanoplasty can occur either from an immediate infection during the healing period, from water getting into the ear, or from displacement of the graft after surgery. Most patients can expect a full "take" of the grafted eardrum and improvement in hearing. After three to four months, water can be allowed to enter the ear and the patient can even return to swimming.

No Nose Blowing, Swimming, Change in Altitude or Airplane Flights until cleared by your doctor to prevent pressure from disrupting the healing of the tissue graft.

Tinnitus or noises in the ear, particularly an echo-type feeling, may be present as a result of the perforation itself. Usually, with improvement in hearing and closure of the eardrum, these sensations clear up. However, tinnitus is unpredictable. In some cases, it can temporarily worsen after the operation. There is no explanation for this temporary situation, but it is rare for the tinnitus to be permanently worse after surgery. A small nerve goes through the ear called the chorda tympani nerve. This nerve goes to the taste buds of the tongue. Should this nerve be stretched or cut during tympanoplasty surgery, there may be a transient period of one or two months after surgery where there is a slight metallic or salty taste to food. Generally, the nerve connections will regenerate and taste will return to normal. The abnormal taste sensation rarely lasts longer than six months. Permanent hearing loss and injury to the facial nerve, or nerve that moves the muscles in the face, are extremely rare complications of tympanoplasty.