

Tympanoplasty -- Over-Under Tympanoplasty, August 2002 Article
OVER-UNDER TYMPANOPLASTY

Jack M Kartush, MD

Most small, posterior eardrum perforations can be reliably treated with a simple medial graft that places temporalis fascia under the eardrum like a bicycle tire patch. For larger or anterior perforations lateral tympanoplasty (repair of the ear drum), wherein fascia is applied to the surface of the de-epithelialized eardrum, is often used. Unfortunately, scarring occasionally mars the result of lateral tympanoplasty, sometimes resulting in blunting or lateralization of the eardrum.

To overcome these problems, surgeons at MEI have developed the over-under tympanoplasty. O-U tympanoplasty is ideal for perforations of all sizes in all parts of the ear drum, affords excellent exposure of the anterior middle ear, has no risk of blunting, and gives a high success rate using a relatively simple technique. Figure 1 shows, from left to right, the steps involved in O-U tympanoplasty. After making an 'H'-shaped incision in the ear canal, the ear drum remnant is elevated off the lateral surface of the malleus. Fascia is laid onto the lateral malleus and the drum remnant is replaced.

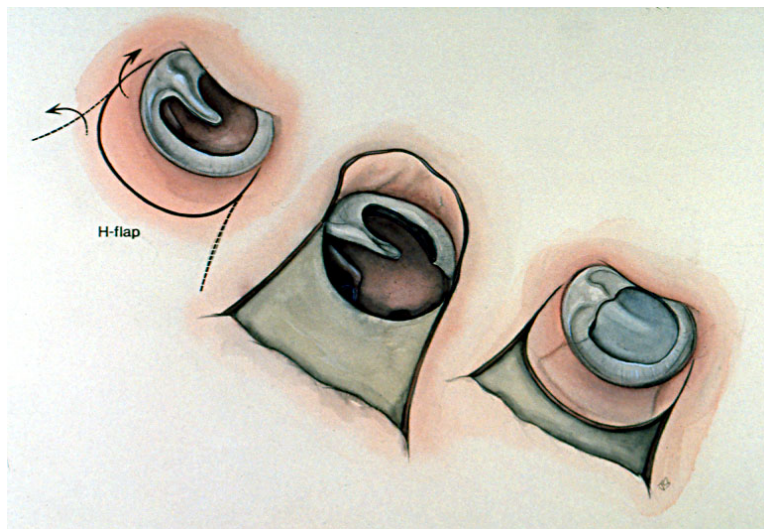


FIGURE 1

Left: making an 'H'-shaped incision in the ear canal; Middle: the ear drum remnant is elevated off the lateral surface of the malleus; Right: Fascia is placed on the surface of the malleus, under the eardrum remnant, and the remnant is placed back in position.

Total elevation of the drum remnant off the malleus provides (a) increased overlap of the graft and drum remnant, (b) better preparation of the graft bed, (c) precise graft

placement unobscured by the malleus, and (d) excellent medial support by the malleus handle. Thus, the malleus becomes an asset rather than a liability.

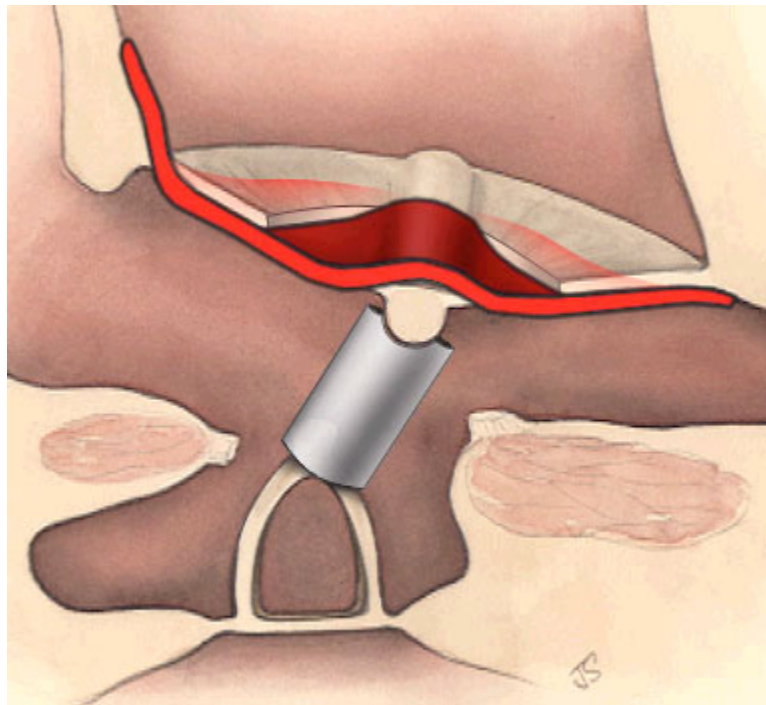


FIGURE 2

Cross-section of middle ear showing how the ossicular replacement prosthesis fits under the malleus and the fascia graft (in red) lies on top.

By virtue of the graft position, O-U tympanoplasty is ideally suited to ossicular chain reconstruction. Figure 2, a cross-section of the middle ear, shows how the incus replacement strut is easily placed between the underside of the malleus handle and the superstructure of the stapes. The availability of the medial surface of the malleus is advantageous in that it allows direct contact between the prosthesis and the malleus. This helps "lock" the prosthesis to minimize extrusion or displacement.