Introduction

Ossiculoplasty is defined as the reconstruction of the ossicular chain which has been eroded, fixed or dislocated. In more than 80% of patients, the cause of ossicular damage (ie, discontinuity, fixation) is cholesteatoma or chronic suppurative otitis media. Trauma or congenital malformations account for most of the remaining causes of ossicular damage (Goldenberg RA,2001).

Ossiculoplasty can be done by either partial ossicular replacement prothesis (PORP) or total ossicular rplacement prothesis (TORP) (Daniels,et al.,1998). The aim of ossiculoplasaty is not to close the air-bone gap per se, but to improve the patient overall hearing (Goldenberg RA ,1994).

The two main categories of prosthetic materials are: (1) biologic (autografts and homografts) and (2) synthetic (alloplasts or allografts). Autograft materials include cortical bone chips, native ossicles (usually the incus), and cartilage from tragus or concha(Luv Ram Javia,et al.,2006).

Alloplastic prostheses are made of numerous artificial substances, including Teflon, polyethylene tubing, metal wire, polycel, carbon, bioactive glass, Ceravital , aluminum oxide ceramic ,titanium and hydroxylapatite. These prostheses may be bioinert or bioactive . Bioinert implants are materials that do not release detectable trace substances. The prototype bioinert material is dense aluminum oxide ceramic (Al2O3) (Yung MW,2003).

Bioactive implants react favorably with the body's tissues to promote soft tissue attachment. Bioactive implants were introduced in the 1970`s with the hope that this new material would have a lower incidence of extrusion. The first

of the bioactive implants were bioactive glasses (Bioglass and Ceravital). the hydroxylapatite is another bioactive material(Yung MW,2003).

The ideal prosthesis for ossicular reconstruction should be biocompatible, stable, safe, easily insertable, and capable of yielding optimal sound transmission. When the surgeon chooses a particular prosthesis, selection must be based on several factors,including compatibility and easiness of configuring the prosthesis during surgery (Yung MW,2003).