Introduction
The goal of tympanoplasty is to reconstruct the tympanic membrane and the sound conducting mechanism in a long lasting way. Since its introduction in 1952 by Zoellner and Wullstein, numerous graft materials and methods of placement have been described to reconstruct the tympanic membrane. Temporalis fascia and perichondrium remain the most frequently used material for closure of the drum in tympanoplasty. Cartilage was first used by Utech in 1959 but it was in 1963, when Salen and Jansen first reported the use of composite graft for tympanic membrane reconstruction. Cartilage has been successful mainly because of its rigidity as it tends to resist resorption and retraction and has been shown to be a safe alternative to temporalis fascia or perichondrium grafting. Recent studies fail to show any statistical difference in post operative hearing outcome when cartilage is compared to fascia or perichondrium as grafting material in tympanoplasty. Purpose of this study is to describe and compare the results of cartilage tympanoplasty and fascia tympanoplasty done endoscopically.

Methods
The present study is conducted at the department of otorhinolaryngology, Medical College, Kolkata. There were total of 64 patients in the 15-50 year age group suffering from chronic suppurative otitis media. The inclusion criteria included were a dry and non discharging ear at least for three weeks, a conductive hearing loss with good cochlear reserve and intact ossicular chain. The exclusion criteria were squamosal variety of chronic otitis media, sensorineural hearing loss and patients less than 15yrs. The cases were randomly selected using a periodic random number to avoid a bias in selection of cases.

All patients were operated endoscopically. Pre and post operative PTA was performed. The air bone gap of each patient was calculated at 500 Hz, 1000 Hz, 2000 Hz both pre and post operatively and compared. Anesthesia- Local Infiltration with (2% lignocaine with 1:100000 adrenaline).

The temporalis fascia was harvested through a separate incision 2cm above the superior attachment of pinna in 36 no. of cases. Cartilage was harvested from the tragus in 16 cases and from conchal cartilage in 12 cases. The tympanomeatal flap is raised using circular knife and the margin of the perforation is freshened. After taking care of the ossicular continuity the graft/tragal or conchal cartilage harvested is placed over the intact ossicles and the tympanomeatal flap is placed over the graft. The meatus is packed with gel foam soaked in antibiotic solution. All the steps were performed under endoscopic vision.

Results
The patients were in the age group of 15-50 years with a mean of 31 years of age. The total no of patients were 64 of which 24 were male and 40 females. Of the total patients 36 underwent endoscopic fascia tympanoplasty and rest 28 underwent endoscopic cartilage tympanoplasty. All cases had intact ossicular chain intraoperatively.

The preoperative average ABG was 31 and 29 db for fascia and cartilage groups respectively. Anatomical results in terms of graft uptake and intact TM over a period of 2
years showed good results both in 26 (92.85%) cases in cartilage group and in 33 (91.66%) cases in fascia group. Two residual perforation were seen in cartilage group with no retraction. In fascia group, there were 3 failures which included one retraction and two perforations. The average post operative ABG in endoscopic fascia tympanoplasty group was 14.61 db and 15.65 db in endoscopic cartilage tympanoplasty group.

Discussion

Tymanoplasty is one of the most common forms of surgery in otology. The cartilage is experiencing a renaissance in ear surgery because it appears to offer an extremely reliable method for reconstructing of the TM. The results are generally quantifies in terms of take up of the grafts and post operative hearing improvement, which is assessed subjectively and objectively.

Gerber et al performed study in which cartilage was compared to fascia; no significant difference in hearing was seen between two groups. Dornhoffer found the same results after comparing cartilage with fascia. Duckert found excellent hearing results with cartilage with closure of the ABG to within 10 db was achieved in 87% of the tympanoplasty. Milewski reported a post operative average ABG of <30 db in 92.4% and <10 db in 43.6% of 197 tympanoplasty using cartilage. In our series, the hearing improvement in audiometric parameters was comparable in both groups. On the other hand closure of the perforation with cartilage compares favourably with other techniques with take up rates varying from 91-96%.

In our study 7% reperforation seen in cartilage group & 8.3% reperforation in facia group. In our present study no retraction or lateralization was observed in average follow up of 2years.

In summary, cartilage is a reliable graft material for reconstruction of the TM in simple COM with stable perforation esp total and anterior perforations. It is also recommended in recurrent perforation.

References