

A Study on Type-1 Tympanoplasty in Perforated Ear Drum

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Abstract:

Tympanoplasty without mastoidectomy is performed to prevent recurrent infection and reconstruct the sound conducting mechanism. In our study 60 patients were selected for tympanoplasty operation. All operations were done in Dhaka National Medical college hospital and private hospital in Dhaka city. Choice of incision was post auricular approach. 20% of patients were operated under general anesthesia and 80% of patients were operated under local anesthesia. Age range of patient was between 15 to 40 yrs. Female patients were predominant. Follow up of patients were up to 2yrs. Overall success rate was 93.3%.

Keyword-Tympanoplasty

Introduction:

Tympanoplasty type I means repair of perforated ear drum also refers to surgery performed to reconstruct a perforated tympanic membrane¹. Ear drum perforation may result from chronic infection or less commonly from trauma to the ear drum. Chronic suppurative otitis media is a common disease in Bangladesh². The complication of CSOM is declining day by day in our country because many surgeons are doing the modern treatment successfully³.

There are five types of tympanoplasty⁴. We here perform only type I tympanoplasty. This operation can be done by general as well as

local anaesthesia⁴. The incidence of local anesthesia is gradually increasing due to its less complication. There are different types of graft material used among them temporalis fascia is widely used to its advantages⁵. We used temporalis fascia⁵ in all cases where as some practice with tragal perichondrium⁶. We performed tympanoplasty by post auricular incision in all cases⁶. We used underlay technique⁶. We intended to evaluate the outcome of first 60 cases of tympanoplasty operation.

Method and Material:

Patients with chronic suppurative otitis media with central perforation admitted in Dhaka National Medical College Hospital in ENT department and private clinic from June 2007

to February 2010 were included in this study. Out of all patients of tympanoplasty only 60 patients has been reported. The age of the patient was between 15 to 40 yrs. Females were predominant over males. No revision cases were included in our study. Evaluation of patients were done by proper history taking, examination thoroughly, radiologically, audiological & finally examined under microscope. All central perforations were dry for at least 3 months. Anesthesia: 20% cases were done by general anesthesia with local infiltration and other 80% were done by local anesthesia with deep sedation.

Operation Technique:

Local infiltration given with 2% xylocaine with adrenaline. Post auricular incision were used. From same incision line temporalis fascia graft was taken. Underlay technique used. Under Microscope fashioning of the perforated margin done Tympanomeatal flap raised. Denudation of handle of malleus was done. Graft material was then secured between the handle of malleus and tympanomeatal flap. Gelfoam placed in the middle ear. Few Gel foams were then placed on graft along with tympanomeatal flap.

Incision was closed. Post operative care was taken to prevent infection. Stitch was removed after 7 days. After 14 days outer pack from external auditory canal removed. Finally inner pack removed after 21 days. Follow up of the patients were done after 3 & 6 months.

Results:

Table-I

Cause of Perforation (N=60 Ears)

Causes	No. of Patients	Percentage
CSOM	54	90%
Trauma	6	10%

Table-II

Site of Perforation (N=60 Ears)

Perforation	No. of Patients	Percentage
RT Ear	20	33.3%
LT Ear	30	50%
Bilateral	10	16.6%

Table-III

Sex Distribution (N=60 Ears)

Sex	No. of Patients	Percentage
Male	20	33.3%
Female	40	66.6%

Table-IV

Position of Perforation (N=60 Ears)

Position	No. of Patients	Percentage
Anterior	24	40%
Posterior	30	50%
Inferior	2	3.3%
Subtotal	4	6.6%

Table-V

Results (N=60 Patients)

Position	No. of Patients	Percentage
Cured	56	93.3%
Failure	4	6.6%

Table-VI

Complications

Complication	No. of Patients	Percentage
Recurrent Perforation	4	6.6%
Facial Nerve Injury	Nil	Nil
Retraction TM	Nil	Nil

Discussion:

Tympanoplasty is now popularized in our country due to its great success rate with less complication. Outcome depends on selection of patients. Central perforation with wide margin. is a good candidate for tympanoptasty operation² Ear should be dry for at least 3 months. Eustachian tube must be patent for good result.^{4,5} In our study post auricular incision was given in all cases. It is easy to perform and the view of site under microscope is wide. For the beginner it is a better approach. Other incision like endaural or permealal can also be given.^{6,7} Temporalis fascia was used in every case because it is thin but tough, can be obtained in same incision, has low O₂ demand i.e. low metabolic rate, after healing look like normal TM,^{6,7} Tragal peirchondrium are also used by other authors.^{7,8} Tympanoplasty can be performed under on lay and underlay technique. Underlay technique give opportunity to inspect and test the mobility of ossicular chain, any disease process can be removed, no chance of trapping squamous epithelium,cholesteatoma pearl formation. Female to male ration was 2:1. Perforation due to CSOM and deafness was major complaints. Posterior perforation was found more than other type of perforation,^{9,10} Left ear perforation was found more. Over all success rate was 93.3%,^{9,10,11} there was no major complication like facial nerve injury or perilymph fistula. Minor complication like recurrent perforation, due to graft failure occur in only 6.6% of cases. This operation can be done both by general and local anesthesia. Nervous and apprehensive patient can be done under general anesthesia. Local anesthesia is cost effective but better pre operative counseling is needed. Follow up of the patients was up to 2 yrs. Most of the patients come with 5 visits up to 6months. After that only 15% patients came with follow up visit up to 2 years.

Conclusion:

In our country most of the patient live in village where there is lack of facilities of this type of modern treatment. Most of the medical college hospital do not have microscope. Tympanoplasty is performed to control infection in middle ear, to improve hearing is a prerequisite in military service and helps in hearing Aids insertion. It is not a difficult operation. Thorough evaluation of the patient before operation needed. It is urged that surgeon should have appropriate experience in microscope and should have keen knowledge about surgical anatomy of external and middle ear by cadaveric temporal bone dissection.

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