Original Research Paper

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"COMPARISION OF IMPROVEMENT IN HEARING AFTER USE OF TORP VERSUS PORP IN TYMPANOPLASTIES [CWU] DONE BY TRAGEL CARTILAGE COVERED WITH TEMPORALIS FASCIA"

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KEYWORDS :

I. INTRODUCTION

The term Ossiculoplasty[1] refers to the operation performed on the middle ear to restore the hearing mechanism by ossicular chain reconstruction. Reconstruction of the ossicular chain is still a developing surgical discipline. The operation remove disease and pathology from the tympanum and reconstructs the tympanic membrane and ossicular chain. The goal is a stable and reliable connection between tympanic membrane and mobile stapes footplate.

1. To evaluate and compare the outcome of Ossiculoplasty using TORP versus PORP covered with tragel cartilage and Temporalis fascia.
2. To assess improvement of hearing after use of TORP Versus PORP.
3. Rejection rate
4. To assess and compare the various causes of Prosthesis Rejection.

II. MATERIAL & METHODS

After approval of study protocol by the local ethical committee and obtaining fully informed patient's written consent, 50 patients of all age group of both sexes, are assigned for Evaluation, of **improvement in hearing after use of TORP versus PORP inTympanoplasties done by using Tragel cartilage covere**

RESEARCH DESIGN

Duration of Study :
June 2012 to December 2014

The present clinical study was conducted at GOVT MEDICAL COLLEGE KOTA.It is a clinical prospective study involving a group of 50 patients,selected by pre operative audiometric assessment and clinical examinations and all subjected to the surgical management by Tympanoplasty with Ossiculoplasty done by using TORP & PORP. Intra operative decision will be taken on the type of prosthesis use for Ossiculoplasty and the patients will be divided in two equal groups.

In group A we use Plastipore Partial Ossicular Replacement Prostheses (PORP) in case with intact stapes superstructures and In group B Plastipore Total Ossicular Replacement Prostheses (TORP) use with absent stapes superstructures.

The method of study will be carried out under the following: History Taking, Local Clinical Examination, General Clinical Examination, Investigations (Routine blood investigations, supravitaltoludine blue staining, coagulation profile, ECG, liver, kidney function tests, specific tests), Autoscopy and microscopic examination of ear, Audiometry, Post operative audiometry.

Each patient will be informed about the nature of disease, expected outcome of the disease with surgery and without surgery, treatment available for the disease, complications of treatment. General Consent for the examination will be taken from the patient.

Criteria for Sample Selection :
Inclusion criteria :

1. Patients with symptoms of Chronic Otitis Media.
2. Hearing loss of more than 30 decibels air bone gap.
3. Patient with no active discharge for more than 03 weeks.
4. Patients in the age group 15 – 45 years.

Exclusion criteria :

1. Patient with an acute exacerbation of Chronic Otitis Media
2. Patients with bilateral Chronic Otitis Media where the ear to be operated is theonly hearing ear.
3. Patients < 15 years and > 45 years.
4. Patients with SNHL

III. OBSERVATIONS

The age of patients in this study varied between 15-45 years. The mean age in Group PORP was 30.44 years and in Group TORP was 28.04 years. In PORP group 14 males & 11 female are there and In TORP group 8 male & 17 females included.

In Group PORP 24 % patients had a well pneumatised mastoid, 28 % patients had asclerotic mastoid and 48% had a diploic mastoid. In Group TORP 16 % had pneumatised mastoid, 40% had sclerotic and 44% had a diploic mastoid.

Pre Op AB Gap Comparison

Pre- Op AB Gap	Group A : PORP	Group B : TORP	Total
20-35 db	9	10	19
36-50 db	15	14	29
50-60 db	1	1	2

Table No 8 : Comparison of Pre –Op AB Gap

In our study , we found that 29 patients (58 %) out of 50 who treated with ossiculopalsty having 36-50 db Air Bone gap pre-operative.But we do not get significant difference in pt no in ab gap in both group . In PORP group 15 patient and in TORP 14 have ab gap in between 36-50 db.

Post Op Remaining AB Gap Comparison

Post- Op Remaining AB Gap	Group A : PORP	Group B : TORP	Total
15-20 db	14	14	28
21-25db	8	7	15
26-40db	2	2	4
Extrution	1	2	3

Table No 9 : Comparison of Post- Op Remaining AB Gap

In our study we found that post operatively at 3 month remaining AB gap is in range of 15-20db in 14pt in group PORP and 14pt in group TORP . While 8pt in group PORP and 7pt in group TORP having AB gap 20-25 db. In both group 2 patients have more than 25 db AB gap which is significant gap**.**

Comparison of AB CLOSURE Post Operatively

AB Closure	PORP (%)	TORP (%)	Total
>15db	20 (80%)	17 (68%)	37
<15db	4 (16%)	6 (24%)	10
Extrusion	1 (4%)	2 (8%)	3
Total	25 (100%)	25 (100%)	50 (100%)
P value >0.05, insignificant			

Table No 10 : Comparison of AB CLOSURE Post Operatively Bone Conduction Improvement in Group A (PORP)

PORP	***Pre OP mean ± SD***	***Post OP mean ± SD***	***Improve ment***	***P value***	***P<0.05***
500Hz	17.2 ± 2.91	14.37 ± 1.68	2.83	0.00002	Significant
1000Hz	16.4 ± 2.70	12.29 ± 2.54	4.11	0.0000018	Significant
2000HZ	18.6 ± 2.29	14.79 ± 2.32	3.81	0.0000	Significant
4000HZ	20.00 ± 2.88	17.708 ± 2.54	2.292	0.0022	Significant

Table No 11 : Bone Conduction Improvement in Group A (PORP) Bone Conduction Improvement in Group B (TORP)

TORP	**Pre OP mean±SD**	**Post OP mean±SD**	**Improvement**	**P value**	**P<0.05**
500Hz	12.2 ± 3.25	10.21 ± 1.04	1.99	0.0038	Significant
1000Hz	12.4 ± 3.26	9.78 ± 1.04	2.62	0.0003	Significant
2000HZ	19 ± 2.04	15.43 ± 1.44	3.57	0.0000	Significant
4000HZ	20.8 ± 2.76	16.52 ± 2.35	4.28	0.0000	Significant

Table No 12 : Bone Conduction Improvement in Group B (TORP)

IV. DISSCUSION;

In the present study maximum numbers of cases were of housewives (40%) & students (34%) . This can be explained by the fact that ladies and educated members came forward for getting hearing improvement . Uneducated and Rural population came only when there was severe hearing loss, thus we can say that education play a great role in seeking early advice regarding disease and treatment In this present study, the pre - operative assessment of patients included an otoscopic examination, oto-microscopic examination, assessment of hearing and radiological evaluation.

The patients underwent Tympanoplasty with Ossiculoplasty, under local anesthesia . In group A the left ear was operated in 56% patients and the Right ear in 44% patients. In group B the right ear was operated in 40% patients and the left ear in 60% patients.

In Group PORP 24 % patients had a well pneumatised mastoid, 28 % patients had a sclerotic mastoid and 48% had a diploic mastoid. In Group TORP 16 % had pneumatised mastoid, 40% had sclerotic and 44% had a diploic mastoid.

V. SUMMARY

The analysis revealed the following results:

1. There was significant improvement in hearing after Ossiculoplasty in both groups at the end of 03 months
2. At the end of 3 months there was a 80% change in AB CLOSURE (>15 DB) in Group A as compared to 68% in Group B .demonstrating better improvement in hearing using PORP as compared to TORP.
3. The improvement in hearing in Bone Conduction threshold in PTA is significant in all frequency but more than 3db improvement in 1000 and 2000hz in PORP and 2000 and 4000hz in TORP group.

VI. CONCLUSION

The improvement in hearing following surgery was significant (AB gap Closure>15 dB)in the range of 80% (Group A) to 68% (Group B) of patients 3 months after surgery. It was further observed in our limited study (n=25 in each group) that the group with PORP had a significant improved hearing outcome as compared to the group with the TORP.

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