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BILATERAL TRANSCANAL ENDOSCOPIC EAR SURGERY

Otolaryngology

Abhishek Gupta Assistant Professor , Dept of ENT, Superspeciality Paediatric Hospital & Post Graduate Teaching Institute , Noida ,

Mohd. Ashraf* Professor , Dept of ENT, Shyam Saha Medical College , Rewa *Corresponding Author

ABSTRACT

Transcanal Endoscopic ear surgery (TEES) was a new horizon in the field of Otology. Operating both the ears simultaneously has many advantages than the conventional microscopic ipsilateral ear surgery. Reduced morbidity, blood loss, financial accruement, less surgical time and better results makes it more popular

Fifty patients were operated over one year at tertiary care center. Patients having dry safe bilateral ear perforation were selected. Patients having conductive hearing loss were considered. PTA was done pre and postoperatively. 4mm and 2.7 mm zero degree endoscopes were used with compatible camera monitor

Fifty patients were included in the study aged between fifteen years and sixty five years. The maximum number of patients was in the age group of fifteen to twenty five years age group. Males were more affected than females. Average hearing loss (AHL) was more in the left ear (36.4dB) than the right ear (34dB).The average hearing gain in right ear was 29.2 dB and 31.6dB in left ear. The infection occurred in seven cases and five cases resolved after instituting topical antibiotics.

Bilateral ear surgery in one single sitting has many advantages over conventional single ear microscopic technique. Hence, it was getting more popular and acceptable.

KEYWORDS

Bilateral ear surgery , Endoscopic ear surgery , transcanal surgery

INTRODUCTION

Endoscopic ear surgery was advancement in the field of otology but operating both the ears in one single sitting was another feather in the cap of otology. There are many advantages and benefits associated with the technique and boost to the national programme of deafness eradication.

MATERIAL AND METHODS

This study was carried out over period of one year between 01 December 2014 to 30 November2015 in Department of ENT at two tertiary care centers in Delhi and Allahabad. A total of fifty patients with safe and dry ears were included in the study.

Preoperative Pure tone audiometry (PTA) was done and patients having pure conductive hearing loss were included and those with any degree of sensorineural hearing loss were excluded from our study. Patients of age group from fifteen years to sixty five years of both sexes were included in the study. All the routine blood investigations were done preoperatively. All perioperative aseptic techniques were used. Large temporalis fascial graft and conchal cartilage were harvested from one side so that it could be used for both the ears. The incision given was Lempert 2 and tympanomeatal flap was elevated. The ossicular integrity was checked and the round window reflex ascertained. The cartilage harvested was sliced and two semilunar shaped cartilages were used to support the graft and ossicular disruption, if any, was reconstructed by cartilage. Abgel was also used to support and antibiotic ear drops were instilled. Total time taken for the operation was noted in every case and the average duration of procedure analyzed. Follow up with endoscopic postoperative photograph was taken and after six weeks pure tone audiometry (PTA) was done.

OBSERVATIONS

The study was conducted at two tertiary care centers prospectively over a period of one year. Fifty patients were included in the study aged between fifteen years to sixty five years. The maximum number of patients was in the age group of fifteen to twenty five years age group and minimum in fifty five to sixty five age groups. Males were more affected with the disease than females and ratio being 14:11. Average hearing loss (AHL) was more in the left ear (36.4dB) than the right ear (34dB).The average hearing gain in right ear was 29.2 dB and 31.6dB in left ear. The infection occurred in seven cases and five cases resolved after instituting topical antibiotics. Two cases failed in one ear each which required surgery. In one case grafting was done and another was operated. The success rate was 98% and failure rate 2% only (as only one ear was infected in two patients).The average time for each bilateral ear surgery was 1.62 hours in our study.

DISCUSSION

India has roughly sixty three million deaf populations with the prevalence of 6.3 % (1). Majority The transcanal endoscopic ear surgery (TEES) has provided another option over the conventional microscopic surgery with many advantages. The endoscopic surgery has wider view of field and can see every nook and corner with ease contrary to microscope which was bulky and hidden areas are not visible (2,3).The concept of minimally invasive surgery in Otorhinolaryngology was a innovative in the field of otology with smaller incision and better images (4).This was a great teaching tool , exhibiting the different steps of the endoscopic technique (5). Operating both the ears in single sitting has got an advantage that large temporalis fascia graft and cartilage harvested can be used for both the ears. Ahmed Daneshi et al (6) in their study had highlighted that operating both the ears in single sitting had many advantages than operating one ear at a time. The time, money, pain, risk involved was reduced and the temporalis fascia of the other side along with cartilage was reserved for future use. Magdy A S et al (7) operating time of was similar as same as that in our study. Small endomeatal incision was better than the large post aural Wildes incision. Moreover, the scar was not visible in TEES and hence cosmetically more acceptable. The time duration of the surgery was also reduced and operating the second ear consumes even lesser time as graft and cartilage has being already harvested. The bleeding was also reduced and total blood loss for both the ears was minimal. Bista et al (8) too used endoscopic pop in technology to repair tympanic membrane and achieved marvelous results. Yuvatiya Plodpai (9) too achieved better results with endoscopic technique in his study of on lay method compared with traditional microscopic technique.

The results of endoscopic surgery was similar as that of the microscopic surgery with more acceptable aesthetic results (10,11) and same results are seen in our study with more than ninety percent results. Y R Dai (12) too achieved results more than ninety percent by endoscopic technique in safe type of CSOM. There are two disadvantages with endoscopic technique, one was lack of depth perception and second was one handed technique (13). Mitchell S, Coulson C in their study emphasized the impact of heat energy generated and various parameters affecting heat production (14).

The theoretical concept of sensorineural hearing loss was not encountered in any of our study nor was it reported by Shiv Kumar et al (15) and other authors. Endoscopic transcanal ear technique has very low complication rates, indicating that it was a reliable therapeutic option, especially for Tympanoplasties, myringoplasties, and stapedoplasties, We and many otorhinolaryngologists view that endoscopic ear surgery would be preferred technique amongst new and budding otologists (16).

CONCLUSION

The bilateral single sitting endoscopic tympanoplasty was a marvelous option with numerous advantages over conventional microscopic ipsilateral ear surgery. This new innovative method reduces the cost, morbidity, saves time and cosmetically more acceptable.

Table No 1

S.No	Age	No	Sex(M:F)	AHL(Rt)	AHL(Lt)	AHG(Rt)	AHG(Lt)	Infection	TOT(hrs)
1	15-25	18	12:8	26	30	20	24	3	29
2	25-35	12	7:5	32	34	28	30	2	21
3	35-45	9	5:4	42	44	36	38	1	14
4	45-55	8	3:3	40	42	36	38	1	12
5	55-65	3	1:2	30	32	26	28	0	5
Total		50	28:22	34dB	36.4dB	29.2dB	31.6dB	7	81/50 =1.62

Fig 1a

Fig: 1b

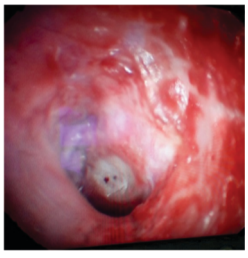

Fig: 2

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