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Review Article

Establishment of significant improvement of hearing post-surgery for mucosal type of chronic suppurative otitis media

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ABSTRACT

Chronic suppurative otitis media occurs in the population as a common disease among people living in low socio-economic status. The associated complaints such as hearing difficulty, irritation, discharge makes it difficult for the people to carry out their daily activities. Therefore, their immediate need for treatment occurs. This review aims at analysing the post-operative outcome of hearing following tympanoplasty in order to overcome their morbidity. The source of this study has been obtained from Pubmed, Google scholar and EMBASE. The material for this review was selected from a reference published between January 1975 to December 2014, with this analysis was made. The pre-op ABG in the studies were all falling in mild to moderate hearing loss according to WHO classification of hearing loss. The patients were grouped in Austin-Kartush criteria, groups A to E. The Austin-Kartush classification group A had 3 studies included. The mean ABG for each were 11.5,8.3 and 13.5. In group B,3studies were included. The mean ABG for each were 11.9,10.9 and 11.1. Group C had 4 studies. The mean ABG were 17.7,15,17.1 and 15.7. Group D had 4 studies included which had the same mean ABG 16.6. Group E had just 1 study of mean ABG 20.1. This review helped to establish that there was significant improvement in hearing post-surgery, in patients with varying degrees of hearing loss.

Keywords: Otitis media, Tympanoplasty, Hearing tests, Ear ossicles

INTRODUCTION

Chronic suppurative otitis media affecting the patients have main complaints include hearing difficulty, ear pain, discharge and intra-cranial and extra cranial complications. In order to overcome their morbidity to carry out daily activities, patients opt for surgery. This review aims at analysing the post-operative outcome of hearing following tympanoplasty.

The outcome of surgery is based on many factors including age/sex, socio-economic status, chronicity of the disease and pre-operative ABG. Type I when 1 ossicle is involved. Type II when any 2 ossicles are involved. Type III when footplate of stapes only present. Type IV when an eroded footplate present. Type V Tympanoplasty refers to a fenestration created in the horizontal semi-circular canal.[1-3] Pure tone audiometry done pre- and post-operatively to assess the ossicular status and the degree of hearing loss helps to plan the patient's further treatment and provide improvement for their morbidity.[4,5]

METHODS

The articles for this review have been obtained from over ten years between 1975 to 2014. Sources were obtained from EMBASE, Google scholar and Pubmed. The studies

were divided on the type of tympanoplasty done, i.e. Group A to E. The characteristics used to obtain the result were just based on factors such as age, pre-op hearing status and post-operative hearing improvement. This was based on ABG data obtained.

Age

From the data obtained it was found that in all studies the minimum age was not less than 10 years i.e. paediatric age group was part of their work. 5 studies had included patients above 70 years of age. 2 studies had patients only upto the age group of 60 years. Other studies had not mentioned the age group addressing them as not relevant.

Surgery done and follow up

Two studies had undergone tympanoplasty with mastoidectomy with only one study having data of follow-up for 6 months.2 studies had undergone tympanoplasty with ossicular reconstruction both having a follow-up period of 50 months. 3 studies underwent canal wall down surgery in which 2 studies had a follow up of 1 year and 1 study had a follow up of 36 months.

Hearing status before surgery

In 2 studies, 83% had hearing loss in mild to moderate category with an average ABG 33 dB.[1] In another study, it was 33 Db and 46 Db for specifications for posterior and anterior involvement of quadrant.

Hearing improvement

Two studies included patients without ossicular erosion were categorized into Austin-Kartush group 0. Austin-Kartush classification group A had 3 studies included. The mean ABG for each were 11.5 dB in first study, 8.3dB second study and 13.5dB for third study. Similarly, in group B, 3 studies were included. The mean ABG for each were 11.9 dB, 10.9 dB and 11.1 dB. Group C had 4 studies. The mean ABG were 17.7 dB, 15 dB, 17.1 dB and 15.7 dB. Group D had 4 studies included which had the same mean ABG 16.6 dB. Group E had just 1 study of mean ABG 20.1 dB.

DISCUSSION

Patients whose post-op ABG was less than 20 db had good success rate in their surgery. The average ABG when comparing all the studies were 30 dB.[6-12] Age factor did play a role, younger age group had better tolerance to surgery and outcomes as compared to older age groups.[13-16]

CONCLUSION

This review was an effort to standardise the degree of hearing improvement following tympanoplasty in Mucosal type of CSOM. For any degree of hearing loss, a better way to segregate the improvement rate of hearing gives a better picture to the patient as well as the surgeon. It improves the quality and standard of health care. Surgeon point of view, it helps for better treatment planning.

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