Scholars Journal of Applied Medical Sciences (SJAMS) **ISSN 2320-6691 (Online)**
Sch. J. App. Med. Sci., 2016; 4(6D):2127-2128 **ISSN 2347-954X (Print)**

(An International Publisher for Academic and Scientific Resources)
www.saspublishers.com DOI: 10.36347/sjams.2016.v04i06.052

Original Research Article

Safe and unsafe CSOM with sensorineural hearing loss: Pathophysiological study

Dr Anshuman Roy[1], Dr Ramanand Yadav[2], Dr Mayur Ingale[3],Dr Sudeep Choudhary[4]
[1]Senior Resident, Dept of ENT, Baba Raghav Das Medical College, Gorakhpur, Uttar Pradesh, India
[2]Associate Professor, B.R.D Medical College, Gorakhpur, Uttar Pradesh, India
[3]Assistant professor, Dept of ENT, Dr D. Y. Patil medical college, Pune, Maharashtra, India
[4]Resident, Dr D. Y. Patil Medical College, Pune, Maharashtra, India

***Corresponding author**
Dr Mayur Ingale
Email: dr.mayuringale@gmail.com

Abstract: Chronic suppurative otitis media is the commonest cause of hearing loss. The deafness caused by chronic suppurative otitis media of safe type was usually considered to be purely of conductive type. With this background present study was planned to study safe and unsafe CSOM with sensori neural hearing loss with Pathophysiological study.One hundred patients of chronic suppurative otitis media with sensori neural hearing loss, either alone or more commonly, with mixed loss were studied in this series. The patients were carefully selected after proper history and careful examination to exclude the above mentioned criteria to rule out the other possible causes of sensori neural loss. Type of pathology in each of these ears was the main factor taken into consideration. Age group and duration of illness were also considered.In our study, 14% cases of unsafe chronic suppurative otitis media were found to be associated with labyrinthine fistula. This proved to be the commonest cause of sensori neural component in unsafe chronic suppurative otitis media followed by granulation over oval window (8%) and cholesteatoma extending to round window in 4 % of cases.In our study, 14% cases of unsafe chronic suppurative otitis media were found to be associated with labyrinthine fistula. This proved to be the commonest cause of sensori neural component in unsafe chronic suppurative otitis media.
Keywords: Chronic suppurative otitis media, labyrinthine fistula.

INTRODUCTION:

Chronic suppurative otitis media is the commonest cause of hearing loss. The deafness caused by chronic suppurative otitis media of safe type was usually considered to be purely of conductive type [1]. In unsafe type of chronic suppurative otitis media, the sensori neural deafness is known, usually due to labyrinthitis. It has been observed in our clinical practice that many cases of safe as well as unsafe type of chronic suppurative otitis media without complications, shows a sensori neural element also. In some cases even dead ears are seen in safe type of chronic suppurative otitis media [2]. With this background present study was planned to study safe and unsafe CSOM with sensori neural hearing loss with pathophysiological study.

MATERIAL AND METHODS:

One hundred patients of chronic suppurative otitis media with sensori neural hearing loss, either alone or more commonly, with mixed loss were studied in this series. The patients were carefully selected after proper history and careful examination to exclude the above mentioned criteria to rule out the other possible causes of sensori neural loss. Type of pathology in each of these ears was the main factor taken into consideration. Age group and duration of illness were also considered.

BACTERIOLOGY AND SENSORINEURAL DEAFNESS

Culture sensitivity was carried out in cases of chronic otitis media, especially with non-healing perforation. Swab from the middle ear discharge was taken. Cultures showed mainly the mixed flora in some cases where as staphylococci or streptococci were in safe disease. Cases of cholesteatoma and some cases of even safe disease, demonstrated presence of Pseudomonas aeruginosa or Proteus mirabilis organisms. Cases showed variation in sensitivity of micro-organisms to antibiotics. The presence of mixed flora or the development of resistance of organisms may

again be due to use of topical ear drops and prolonged antibiotic treatment received by patient especially in young age.

RESULTS:

Table 8: Type of Pathology

Pathology	No. of Cases
Safe CSOM:	**50**
Perforation:	
Small	12
Medium	18
Subtotal	20
Unsafe CSOM:	**50**
Marginal perforation	19
Attic pouch / perforation	31

Causes of SNHL in Safe and Unsafe CSOM

In our study, 14% cases of unsafe chronic suppurative otitis media were found to be associated with labyrinthine fistula. This proved to be the commonest cause of sensori neural component in unsafe chronic suppurative otitis media followed by granulation over oval window (8%) and cholesteatoma extending to round window in 4 % of cases. There were 4 cases with sensori neural hearing loss in safe CSOM group, the cause of which could not be ascertained.

Table 9: Causes of SNHL in Unsafe CSOM

Causes of SNHL in unsafe CSOM	No. of Pts.	%(n=50)
Cholesteatoma extending upto round window	2	4%
Labyrinthine fistula	7	14%
Granulations over oval window	4	8%

DISCUSSION:

Sensorineural hearing loss was seen in CSOM with and without cholesteatoma [3, 4], Levine *et al.;*Neeraj Kasliwal *et al.;* [5], Irwan [6] observed a definite correlation between severity of sensori neural hearing loss and presence of cholesteatoma. Our study shares similar observation. Handa *et al.;* [50] found that in cases of cholesteatoma a relative sensori neural hearing loss was greater when disease was present in the mesotympanum. In our study also, we had two cases of cholesteatoma extending upto round window and 4 cases of granulation involving oval window area with greater threshold of >30 db sensori neural hearing loss.

A serious sequelae of otitis media (OM) is damage to the inner ear, leading to sensori neural hearing loss, which is limited to the cochlear basal turn [5]. The etiology of this hearing loss has remained elusive, but previous investigations indicate that permeability of the three-layered round window membrane (RWM) is of central importance. Some studies have addressed the effects of various bacterial products on the permeability of the round window membrane [7, 8].

CONCLUSION:

In our study, 14% cases of unsafe chronic suppurative otitis media were found to be associated with labyrinthine fistula. This proved to be the commonest cause of sensori neural component in unsafe chronic suppurative otitis media .

REFERENCES:

1. Report on prevalence and aetiology of hearing impairment ICMR, New Delhi 1983.
2. Mac Andie C, O'Reilly BF; Department of Otorhinolaryngology Stobhill NHS U.K. Sensori neural hearing loss in chronic otitis media. Clinical Otolaryngology Allied Sciences, 1999;24(3):220-2.
3. Khalmanova luV, Kosiakov Sla; The influence of CSOM on SNHL. Vestn Otorhinolaryngology 2012; (3):7-10.
4. Portier F, Lescanne E; Studies of labyrinthine cholesteatoma –related fistula. Journal of Otolaryngology, 2005; 34(1):1-6.
5. De Azevedo AF, Pinto DC, de Souza NJ; Sensorineural hearing loss in chronic suppurative Otitis media with and without cholesteatoma. Brazilian Journal of Otorhinolaryngology 2007; 73(5):671-74.
6. Rohit Sharma, Vinit K Sharma; Analysis of sensorineural hearing loss in CSOM with and without cholesteatoma, Indian Journal of Otology 2012; 18(2):65-68.
7. Kasliwal N, Joshi S, Pareek SM; Determinants of sensorineural hearing loss in chronic middle ear disease. Indian J Otolaryngol Head Neck Surg 2004; 56(4): 269-273.
8. Linder TE, Zwicky S, Brändle P; Ototoxicity of ear drops: AClinical Perspective. The American Journal ofOtology, 1995; 16(5): 653-657.