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Original Research

Assessment of status of the contralateral ears in patients with unilateral CSOM

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ABSTRACT:

Background: In the context of a permanent tympanic membrane (TM) rupture, chronic irreversible inflammatory pathological tissue damage of the middle ear cleft mucosal lining is referred to as chronic suppurative otitis media. The present study was conducted to assess effect of unilateral CSOM on contralateral ears (CLEs). **Materials & Methods:** 54 patients of CSOM of both genderswere divided into 2 groups of 27 each. Group I patients had cholesteatoma (squamous type) and group II patients were without cholesteatoma (mucosal type). Pure tone audiometry was used to evaluate the state of hearing. **Results:** Out of 54 patients, 20 were males and 34 were females. Contra lateral ears were normal in 14 in group I and 11 in group II. Abnormality found were thinning of tympanic membrane in 2 and 2, Pars flaccida retraction in 4 and 3, tympanosclerosis in 3 and 4, Pars tensa retraction in 2 and 1, and opaque tympanic membrane in 3 and 1 patients in group I and II respectively. The difference was non- significant (P>0.05). The mean conductive hearing loss in group I was 34.1 dB ABG and in group II was 29.7 dB ABG. The difference was significant (P<0.05). **Conclusion:** Patients with chronic suppurative otitis media frequently had contralateral ear abnormalities, such as Pars flaccida retractionin group I patients and tympanosclerosis in group II patients. For this reason, a thorough examination of the contralateral ear is essential to identify any concealed diseases.

Key words: Chronic suppurative otitis media, contralateral ears, middle ear cleft

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INTRODUCTION

In the context of a permanent tympanic membrane (TM) rupture, chronic irreversible inflammatory pathological tissue damage of the middle ear cleft mucosal lining is referred to as chronic suppurative otitis media (CSOM).[1] Clinically, deafness and ear discharge are the symptoms.[2] While a single etiologic reason for otitis media is unlikely, impairment of the eustachian tube due to blockage or malfunction is usually accepted as a common factor linked with the condition.[3]

Globally, the prevalence of CSOM varies; it affects 30% of people in North America, 4-6% of people in Africa, and less than 1% of people in the United States and the United Kingdom.[4]The main causes of the prevalence of COM are poverty, crowded living conditions brought on by big families, poor sanitation, and a lack of environmental and personal cleanliness. A contralateral ear problem is likely to occur in a patient with CSOM.[5]

The literature mentions that cholesteatoma, perforations, retraction pockets, and effusions are the several stages of the same pathology that can advance bilaterally. When both ears are affected, albeit to varying degrees, there is a strong likelihood that tubal dysfunction is the cause of COM.[6]The present study was conducted to assess effect of unilateral CSOM on contralateral ears (CLEs).

MATERIALS & METHODS

The present study was conducted on54 patients of CSOM of both genders. All were agreed to participate in the study with their written consent.

Data such as name, age, gender etc. was recorded. Patients were divided into 2 groups of 27 each. Group I patients had cholesteatoma (squamous type) and group II patients were without cholesteatoma

(mucosal type). Pure tone audiometry was used to evaluate the state of hearing. The two groups were found to have diseases such as pars tensa retraction, thinning tympanic membrane, pars flaccida retraction, and opaque tympanic membrane. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 54		
Gender	**Males**	**Females**
Number	20	34

Table I shows that out of 54 patients, 20 were males and 34 were females.

Table II Otoscopic findings in contralateralears in both groups

Findings	Variables	Group I (27)	Group II (27)	P value
Normal		14	11	0.52
Abnormal	Thinning tympanic membrane	2	2	0.76
	Pars flaccida retraction	4	3	
	Tympanosclerosis	3	4	
	Pars tensa retraction	2	1	
	Opaque tympanicmembrane	3	1	

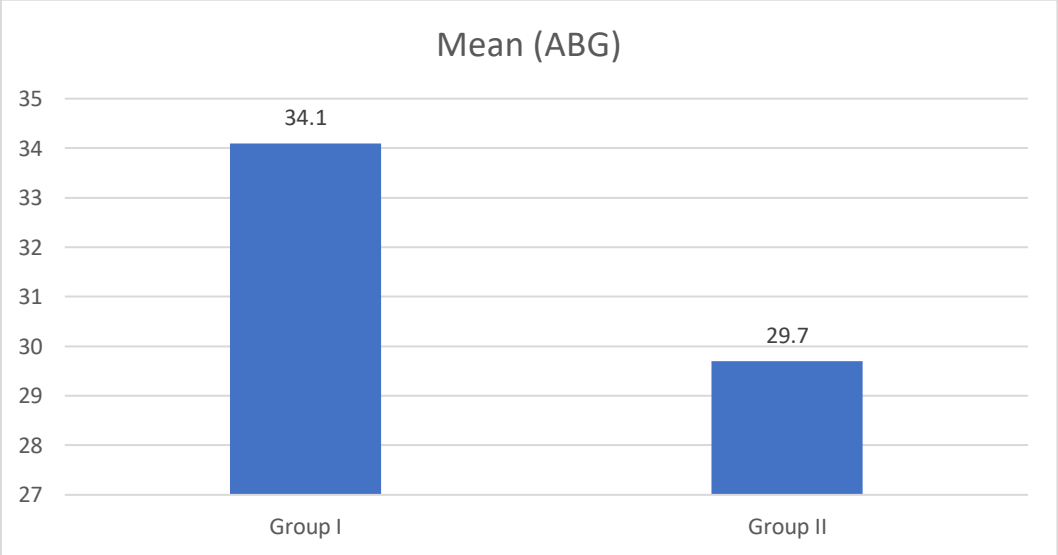
Table II shows that contra lateral ears were normal in 14 in group I and 11 in group II. Abnormality found were thinning of tympanic membrane in 2 and 2, Pars flaccida retractionin 4 and 3, tympanosclerosis in 3 and 4, Pars tensa retraction in 2 and 1, and opaque tympanic membrane in 3 and 1 patients in group I and II respectively. The difference was non- significant (P>0.05).

Table III Evaluation of conductive hearing loss

Groups	Mean (ABG)	P value
Group I	34.1	0.05
Group II	29.7	

Table III, graph I shows that mean conductive hearing loss in group I was 34.1 dB ABG and in group II was 29.7 dB ABG. The difference was significant (P<0.05).

Graph I Evaluation of conductive hearing loss



DISCUSSION

Chronic otitis media (COM) is an inflammation of the middle ear cavity and mastoid mucosa with irreversible tissue damage.[7,8] Although improvements in general health and medical care, COM is still common around the world.[9,10]The pathology starts first as simple abnormalities then progress to severe changes, as in the following sequences; the TM retraction, middle ear effusion, or even perforation, or might lead to formation of the cholesteatoma so it represents various pathological stages but of the same disease, and this evolution concept of the continuum theory could be even detected in the contralateral ear (CLE).[11,12]The present study was conducted to assess

status of the contralateral ears (CLEs) in patients with unilateral CSOM.

We found that out of 54 patients, 20 were males and 34 were females.In research by Damghani et al[13] involving 100 COM patients, 60% of the patients had contralateral ear problems. According to otoscopy research, 54% of patients had a contralateral ear issue, with ear drum perforation being the most frequent condition. Contralateral ear issues were shown to be 48% common in PTA cases (85% conductive hearing impairment, 12.5% sensorineural hearing impairment, and 1.2% mixed). Whereas half of the patients with sensorineural hearing impairment experienced issues at frequencies higher than 1000 Hz, 73.2% of patients with conductive hearing loss experienced issues at all frequencies. The contralateral ear was problematic for 38% of the individuals. Contralateral ear problems were found to occur in 31.5% of cases according to HRCT and 36% of cases according to Schuller graphical analysis.

We found that Contra lateral ears were normal in 14 in group I and 11 in group II. Abnormality found were thinning of tympanic membrane in 2 and 2, Pars flaccida retraction in 4 and 3, tympanosclerosis in 3 and 4, Pars tensa retraction in 2 and 1, and opaque tympanic membrane in 3 and 1 patients in group I and II respectively. The mean conductive hearing loss in group I was 34.1 dB ABG and in group II was 29.7 dB ABG.In the study by Vartiainen E et al[14], 271 individuals with COMwith or without cholesteatomawere assessed. The CLE's pathologic changes, including tympanosclerosis, sticky otitis, cholesteatoma, retraction pockets, and tympanic membrane perforations, were identified. According to the results, 39.1% of CLEs had pathologic changes. 60.9% of the CLEs had normal values. Tympanic membrane dry perforation was the most common finding in these patients (26.9%). Retractions (7.3%), cholesteatomas (1.9%), sclerosis (2.2%), and adhesive otitis media (0.7%) were the remaining diseases. A significant portion of the patients' CLEs with COM had some degree of involvement from a variety of diseases.

The shortcoming of the study is small sample size.

CONCLUSION

Authors found that patients with chronic suppurative otitis media frequently had contralateral ear abnormalities, such as Pars flaccida retractionin group I patients and tympanosclerosisin group II patients. For this reason, a thorough examination of the contralateral ear is essential to identify any concealed diseases.

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