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Analysis of clinical status of contralateral ear in cases of unilateral squamosal chronic otitis media

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ABSTRACT

Background: Squamosal COM is a condition caused by various etiological factors which are likely to affect the other side too. If diagnosed and intervened in time, the progression of the disease from simple negative middle ear pressure to cholesteatoma formation can be prevented and ear can be protected from hearing loss. Therefore it is important to assess and evaluate the contralateral ear appropriately.

Methods: This prospective study included patients above six years of age suffering from unilateral squamosal chronic otitis media. Their contralateral ears were examined and assessed for any ear disease.

Results: We found various conditions in contralateral ears ranging from normal tympanic membrane to various types and grades of retractions of pars tensa as well as pars flaccida and some infectious conditions too. The commonest finding was secretory otitis media (23%) and the least common was otomycosis (3%).

Conclusions: Most common status in contralateral ear was found to be secretory otitis media in adult and paediatric age groups (23%). In our study, 84% of the patients showed pathology in the contralateral ear and 16% were normal, so the study proves that in patients with unilateral squamosal otitis media, with no complaints or previous history of discharge in contralateral ear shows pathology to quite a good extent, so the contralateral ear should always be evaluated comprehensively to efficiently diagnose any alterations and provide timely therapeutic intervention to prevent further progression of the disease and hearing loss.

Keywords: Contralateral ear, Squamosal COM, Tympanic membrane, Retraction pockets, Cholesteatoma

INTRODUCTION

Squamosal chronic otitis media is defined as an inflammatory process in the middle ear cleft characterized by retraction pocket, cholesteatoma formation or epithelial layer growing into the middle ear. The global burden of illness from CSOM involves 65–330 million individuals with draining ears.¹ Prevalence in India was found to be around 7.8% which is the highest globally.²

The commonest cause of and the most accepted theory for cholesteatoma formation is taken as negative middle

ear pressure caused by Eustachian tube dysfunction as a result of recurrent upper respiratory tract infections or adenoid hypertrophy. Therefore, this condition is likely to affect both the ears in similar or different forms of COM to a variable degree.

There lies the importance of considering the contralateral ear in conjunction with the affected side. Proper analysis of the contralateral ear is equally important as it will help in diagnosis of any disease process established or in early stage, its early treatment and prevention of progression of the disease. In this study, we have evaluated the condition

of contralateral ear i.e. the asymptomatic ear in cases of unilateral squamosal otitis media.

METHODS

This was a Prospective study was undertaken in Dr D Y Patil Medical College and Hospital, DPU, Pune from September 2016 to September 2017. Inclusion criteria were all patients suffering from unilateral Squamosal COM above the age of 6 years. The exclusion criteria were traumatic COM, bilateral COM, and previous history of ear discharge in contralateral ear.

Cases selected for the study were subjected to a detailed history taking and clinical examination of ear, nose and throat with special reference to the ear.

The method of study was carried out under the following heading.

- History taking
- Clinical examination
- Investigations like otomicroscopy, pure tone audiometry, impedance audiometry, HRCT of temporal bone as required.

RESULTS

In our study, the most common finding in contralateral ear is Secretory otitis media (23%) with grade I, grade II, grade III retraction of pars tensa with normal pars flaccida. This was followed by normal ears (16%) with normal pars tensa and normal pars flaccida. 12% showed features of adhesive otitis media with grade IV retraction of pars tensa and with normal pars flaccida. Otitis media with effusion with air fluid level in pars tensa with normal pars flaccida was seen in 12% of the cases.

Acute suppurative otitis media with congested and bulging TM was found in 9% of the patients whereas Chronic mucosal otitis media with small perforation of

the pars tensa, without any complaints or history of ear discharge, with normal pars flaccida was also seen in 9%. 8% showed tympanosclerosis with TS-patch over pars tensa with normal pars flaccida. Grade I pars flaccida retraction was seen in 8% and otomycosis in 3% (Figure 1).

Figure 1: Status of contralateral ear in percentage.

In this study, the most common finding in the contralateral ear in adult and paediatric age group is Secretory otitis media, adult age group (18%) paediatric age group (34%). The study showed in adult age group - normal (16%), adhesive otitis media (15%), otitis media with effusion (9%), acute suppurative otitis media (10%), chronic mucosal otitis media (7%), tympanosclerosis (12%), grade I pars flaccida retraction (9%) and otomycosis (4%). In paediatric age group, otitis media with effusion (19%), Normal (16%), chronic mucosal otitis media (13%), adhesive otitis media (6%), acute suppurative otitis media (6%) and grade I pars flaccida retraction (6%) were found (Table 1) (Figure 2).

Table 1: Status of contralateral ear in paediatric and adult patients.

Status of contralateral ear	Adult	Paediatric	Total
1. Secretory otitis media	12	11	23
2. Normal	11	5	16
3. Adhesive otitis media	10	2	12
4. Otitis media with effusion	6	6	12
5. Acute suppurative otitis media	7	2	9
6. Chronic mucosal otitis media	5	4	9
7. Tympanosclerosis	8	0	8
8. Grade I pars flaccida retraction	6	2	8
9. Otomycosis	3	0	3
Total	68	32	100

Figure 2: Age wise distribution of patients with different conditions of contralateral ear.

DISCUSSION

Out of 100 patients, most common pathology in our study was secretory otitis media in 23 patients. In a similar study conducted by Shireen et al, pars tensa retraction was seen in 52.3%, grade 1 pars tense being the most common (28.6%).³ In another study conducted by Sady Selaimen da Costa et al, out of 198 patients with squamosal otitis media, mild retraction of pars tensa was seen in 28 patients (14.1%), moderate retraction of pars tension 23 patients (11.1%).⁴

In a similar study conducted by Jadia et al, out of 170 patients, grade 1 pars tense retraction was seen in 60 (35.2%) patients, grade 2 in 15 (8.9%) patients, grade 3 pars tens retraction in 20 (11.8%).⁵

16 patients (16%) out of 100 cases in our study were found to have normal contralateral ear. In a similar study conducted by Kayhan et al, out of 243 patients, 100 patients (41.2%) were seen with squamosal otitis media.⁶ In the study conducted by da Costa Sady selaimen et al, 33 patients (16.7%) had normal contralateral ear.⁴ In a study conducted by Kamal-Eldin Ahmed Abou-Elhamd et al, out of 25 patients with squamosal disease, 13 patients

(52%) presented with normal contralateral ear.⁷ In a similar study conducted by Jadia et al, 170 patients were diagnosis with unilateral squamosal type of otitis media.⁵ Out of these 50 (29.4%) patients had normal contralateral ear. In a study conducted by Adhikari et al, 269 patients were present with squamosal disease in the primary ear.⁸ Out of these patients, 77 patients (28.6%) were seen with normal tympanic membrane in contralateral ear.

Out of 100 patients, 12 (12%) patients had adhesive otitis media in the contralateral ear in our study. In a similar study conducted by Kamal-Eldin Ahmed Abou-Elhamd et al, out of 25 patients, adhesive otitis media in contralateral ear in 3 patients (12%).⁷ In a study conducted by Shireen et al, out of 21 cases, 14.3% cases had adhesive otitis media in contralateral ear.³

12 (12%) patients out of 100 cases had otitis media with effusion in our study. In a similar study conducted by Kayhan et al, 1.6% cases had fluid in the middle ear.⁶ In a similar study conducted by da Costa Sady selaimen et al, fluid in the middle ear was seen in 1 patient (0.6%) out of 198 cases.⁴ In a study conducted by Kamal-Eldin Ahmed Abou-Elhamd et al, out of 25 patients, otitis media with effusion was seen in 1 patient (4%).⁷ In a study conducted by Khalil et al, out of 50 cases, otitis media with effusion

was seen in 5 patients (10%).⁹ Adhikari et al conducted a study in which out of 269 patients with unilateral squamosal otitis media, in 91 (33.6%) patients, retraction/otitis media with effusion and sequel was seen.⁹

In our study out of 100 patients, 9 patients were seen with mucosal type of otitis media in the contralateral ear. In a similar study conducted by Kayhan et al, 243 patients were diagnosed with squamosal type of otitis media in primary ear.⁶ Perforation was seen in 49 patients (20.2%). In a study conducted by da Costa Sady selaimen et al, out of 198 patients with squamosal type of otitis media, 38 patients were seen (19.3%) with perforation.⁷ In a study conducted by Khalil et al to assess the contralateral ear in patients with unilateral ear with cholesteatoma, out of the 50 cases, mucosal otitis media was seen in 8 (16%) patients.⁹ In a study conducted by Adhikari et al, out of 269 patients, mucosal type of otitis media was seen in 28 patients (10.4%).⁸

Out of 100 patients with unilateral squamosal otitis media in our study, 8 (8%) patients were seen with tympanosclerosis in the contralateral ear. In a study conducted by Kayhan et al, out of 243 patients myringosclerosis was seen in 15 patients (6.2%) in the contralateral ear.⁶ In a study conducted by Shireen et al, out of 21 cases, tympanosclerosis was seen in 19% cases in the contralateral ear.³ In a study conducted by Khalil et al, out of 50 cases with unilateral squamosal otitis media, tympanosclerosis was seen in 4 patients (8%).⁹ In a similar study conducted by Jadia et al, 170 patients were diagnosis with unilateral squamosal type of otitis media.⁵ Out of these tympanosclerosis in the contralateral ear was seen in 5 (2.9%) patients. In a study conducted by Adhikari et al, 269 patients were present with squamosal disease in the primary ear.⁸ Out of these patients, tympanosclerosis in contralateral ear was seen in 27 patients (10.1%).

In our study out of 100 patients with unilateral squamosal disease, 8 patients were seen with grade 1 pars flaccid retraction. In a similar study conducted by Kayhan et al, 243 patients were diagnosed with squamosal type of otitis media in primary ear.⁶ Out of these pars flaccid retraction was seen in 51 patients (24.7%). In a similar study conducted by Shireen et al, in 21 cases with squamosal disease, grade I pars flaccida retraction was seen in 2 patients.³

Out of 100 patients with squamosal disease, acute suppurative otitis media was seen in 9 patients (9%) whereas otomycosis was seen in 3 (3%) patients in the contralateral ear in our study.

CONCLUSION

Majority i.e. 84% of patients with unilateral squamosal chronic otitis media showed abnormality in the contralateral ear though they did not have any symptoms in that ear. Most common status in contralateral ear was found to be Secretory otitis media in both adult and pediatric age groups. Therefore it is extremely important and imperative to assess the contralateral ear for any abnormality to prevent progression of disease and hearing loss.

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