

Clinical Profile of Chronic Otitis Media: Our Experience

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1. Introduction

Chronic otitis media (COM) is an inflammatory process in the middle-ear space that results in long-term, or permanent changes in the tympanic membrane including atelectasis, dimer formation, perforation, tympanosclerosis, retraction pocket development, or cholesteatoma.¹ Chronic otitis media is a major public health problem especially in developing countries.² Malnutrition, overcrowding, substandard hygiene, frequent upper respiratory tract infections are all listed as risk factors.^{2,3}

Patients with tympanic membrane perforations who continue to have mucoid ear discharge for 6 weeks to 3 months despite medical treatment, are recognised as COM cases. COM typically produces a mild to moderate conductive hearing loss. Higher levels of hearing loss maybe seen if the infectious process involves the cochlea or nerve or if there is exposure to ototoxic drugs. Mortality and disability due to otitis media are mainly related to the complications of COM.⁴

The clinical presentation of COM varies with the severity of the infection, the host response, and the time over which it manifests. COM may be entirely asymptomatic, particularly in children who often do not complain of hearing loss. Other than hearing loss, patients also present with otalgia, otorrhea, aural fullness, pulsatile tinnitus, and otorrhagia.¹ Even though the incidence of suppurative intracranial complications of otitis media has declined dramatically after the advent of antimicrobial agents, serious and potentially life threatening complications are still encountered, especially in developing countries.⁵

COM is a common disease encountered in ENT practice, and proper evaluation and treatment can prevent the morbidity due to its complications.

This study was conducted to know the clinical profile of patients with COM visiting our centre.

1.1 Objective

To study the characteristic clinical profile in chronic otitis media.

2. Materials and Methods

A prospective study, which included 1000 patients diagnosed with COM, was conducted in the Department of Otorhinolaryngology, Bangalore Medical College and Research Institute, between June 2018 and June 2019.

Sample size: 1000

Study design: Prospective descriptive study.

Inclusion criteria:

- 1) Patients between the age of 1-65 years diagnosed to have COM, with history of ear discharge for more than 3 months.
- 2) Patients who give informed consent to participate in the study.

Exclusion criteria:

- 1) Patients with otitis externa.
- 2) Patients with a traumatic perforation of tympanic membrane.
- 3) Patients with congenital hearing loss.
- 4) Patients with otosclerosis.

Method of collecting data

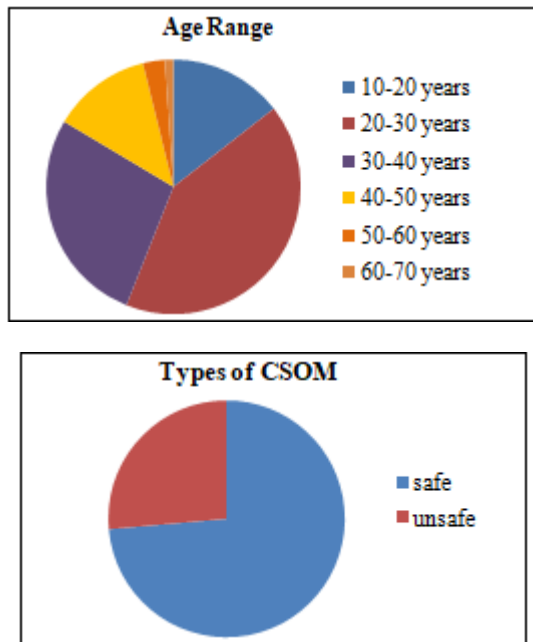
The data was collected on a predesigned proforma, which includes patient demographics, detailed history and clinical examination. Otomicroscopic findings were also included. Findings on audiometry in each case were recorded. High resolution computed tomography findings were recorded as per case. In patients with safe CSOM whose ears had been dry for 6 weeks, only tympanoplasty was performed. In actively discharging ears a cortical mastoidectomy was also performed. Canal wall down procedure was performed in unsafe disease. Temporalis fascia was used as the graft material in most cases. Cartilage and collagen was used in some cases. Anterior tucking and canaloplasty were done in some cases as required. In patients with complications, the complications were first managed medically or surgically and then the ear surgery was performed.

3. Results

The age range of patients in our study was between 5-65 years. Most of the patients, that is 420 patients(42%) were in the 20-30 years age range. 124 patients were less than 17 years of age, out of which 24 cases were less than 10 years. These 24 cases all had unsafe type of disease and underwent modified radical mastoidectomies.

In our study, there were 548 male patients(54.8%) and 452 female patients(45.2%).

We had 736 (73.6%) patients with safe type of COM, and 264(26.4%) patients with unsafe type. Out of the 264 patients, 208 (78.8%) patients had no complications and 56(21.2%) patients presented with complications. 24(9%) cases presented with mastoid abscess, 12 (4.5%) cases presented with meningitis, 8(3%) cases presented with lateral sinus thrombophlebitis, 8(3%) cases presented with a cerebellar abscess and 4(1.5%) case presented with facial nerve palsy.



Among the cases with safe type of COM, 444 cases underwent cortical mastoidectomy with tympanoplasty (60.3%), 292 (39.68%) cases underwent tympanoplasty alone. 568 (77.2%) cases underwent type 1 tympanoplasty, whereas 168 (22.8%) cases underwent type 3 tympanoplasty. In 116 cases, septal cartilage was used for type 3 tympanoplasty while, grommet was used for ossicular chain reconstruction in 52 cases. 36 cases underwent revision tympanoplasty. Temporalis fascia was used as the graft material in most cases (716). Cartilage (8 cases) and collagen (12 cases) were used in 20 of the revision cases. Anterior tucking was done in 96 (9.6%) cases. Canalplasty was done in 176 patients (17.6%).

Among the cases with unsafe type of disease, 236 (89.4%) cases underwent canal wall down mastoidectomy, whereas 28 (10.6%) cases with limited disease underwent limited mastoidectomy. 12 (4.5%) cases were revision cases.

Out of all the cases operated, 80% of the cases were done under local anaesthesia and 20% were done under general anaesthesia.

4. Discussion

Chronic otitis media is a global disease, seen in all continents of the world, but is most commonly seen in developing countries.⁶

In our study of 1000 patients of COM operated over the course of one year, majority of the patients were between 20-30 years of age. In a similar study, the most common age range of patients was found to be between 21-40 years.⁷

We had 54.8% male patients and 45.2% female patients. In the study done by Kulkarni S et al, including 528 cases of COM operated over a period of 4 years, 57.39% of patients were male and 42.61% were female. In the study done by Murat Karaman⁸ et al, on 100 patients of COM, female to male ratio of 1.7:1. As opposed to these studies, in our study males outnumbered females.

In our study, 5.6% patients presented with complications. Memon et al⁹ in a series of patients observed that the rate of extracranial complications was 4.1% and that of intracranial complications was 2.3%. 6 cases presented with mastoid abscess. Osama et al¹⁰ observed mastoid abscess to be the most common extracranial complication.

Among the cases with safe type of COM, 444 cases underwent cortical mastoidectomy with a tympanoplasty (60.3%), 292 (39.68%) cases underwent tympanoplasty alone. Krishnan A et al¹¹ concluded that the mastoid antrum needs to be opened if the middle ear mucosa is unhealthy. A tympanoplasty is sufficient if the middle ear mucosa is healthy.

Atticotomy, atticostomy, or limited mastoidectomy are different surgical techniques that can be employed for different sizes and locations of cholesteatoma. These procedures offer a good view of the anterior mesotympanum and attic with smaller cavities.¹² Among the cases with unsafe type of disease in our study, 236 (89.4%) cases underwent canal wall down mastoidectomy, whereas 28 (10.6%) cases with limited disease underwent limited mastoidectomy.

Temporalis fascia was the most common graft material used in our study. Type 3 tympanoplasty with stapes columella grafting is a technique for ossicular reconstruction in which cartilage or other graft material is placed directly on the stapes head. Wood CB et al. concluded that type 3 tympanoplasty with stapes columella grafting lead to variable rates of hearing improvement in case of canal wall down mastoidectomy.¹³ In our study 116 cases with safe type of COM underwent type 3 tympanoplasty with cartilage. As a non standard application, grommets can be used as partial ossicular reconstruction prostheses, especially in cases where the mobile stapes has been preserved. Because of its shape and size, it can be fixed in a stable position onto the head of the stapes.¹⁴ We have used grommets for ossicular reconstruction in 52 cases of safe type of COM.

Canalplasty is the circumferential enlargement of the bony external auditory canal by removing the overhanging canal bulge to visualise the entire tympanic annulus.¹⁵ Canalplasty was done in 44 patients in our study. Tympanoplasty with anterior tucking of the graft is an effective surgical technique for subtotal perforations.¹⁶ Anterior tucking was done in 96 (9.6%) cases.

80% of our cases were done under local anaesthesia and 20% were done under general anaesthesia. Canal wall down mastoidectomy under local anaesthesia is well tolerated by most patients in spite of relatively long duration with prolonged exposure of the patient to noise of drilling.¹⁷

5. Conclusion

Most of our patients were male, in the age range of 20-30 years. Most of the cases were of safe type and cortical mastoidectomy with tympanoplasty was the most common procedure performed. Temporalis fascia was the most

common graft material. Mastoid abscess was the most common complication.

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