



CHANGING TRENDS OF COMPLICATED CHRONIC OTITIS MEDIA

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ABSTRACT

Aims and Objectives-To study various types of otogenic complications in terms of their recent presentation and management. **Material and Methods-**The present study was conducted in Department of ENT and Head and Neck Surgery, SMHS Hospital, GMC Srinagar from September 2020 to May 2023. A total of 30 patients of chronic otitis media with intratemporal or intracranial complications were included in the study. HRCT Temporal bone was done in all patients and were treated surgically. Appropriate antibiotics were given and mastoidectomy performed. **Results-**Majority of patients had extra cranial complications, which included post-aural abscess (40%), post aural fistula (20%), facial nerve palsy (10%), labyrinthitis with lateral semi-circular canal (LSC) fistula (6.6%), and bezold's abscess (3%). Among intracranial complications, extradural abscess was seen in 10%, followed by meningitis in 6.6% and brain abscess in 3%. **Conclusion-** Complications of chronic suppurative Otitis media are a great concern for clinical practice. High level of awareness in patients regarding these complications and utility of early clinical detection and the appropriate treatment modalities are required to decrease the morbidity and mortality.

KEYWORDS

CSOM, Complications, Mastoid, Abscess, Cholesteatoma.

INTRODUCTION

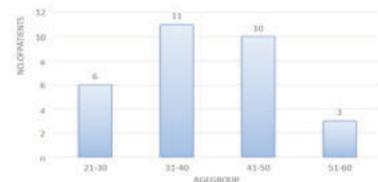
Chronic suppurative otitis media (CSOM) is a significant health concern in developing countries, leading to hearing loss and severe complications due to a lack of awareness, limited access to qualified otologists, and economic barriers.[1] Development of complications depends on high virulence of organism, poor immunity of patients, inadequate antibiotic treatment of acute middle ear and mastoid infection and presence of chronic systemic disease.[4] Emerging bacterial resistance to antibiotics have also been implicated in increasing incidence of complications in some cases.[5] Prior to antibiotic era, intracranial (IC) complication occurred in 2.3–4 % cases. With advent of antibiotic and new surgical techniques, the complication have been greatly reduced to 0.15–0.04 %. Mortality decreased from 25 to 8 %. [2]. Despite the significantly decreased incidence of CSOM-related complications since the introduction of antibiotics, this clinical problem has not been eliminated. CSOM remains a serious concern, particularly in developing countries and socioeconomically poor regions[3]. There continues to be reports of CSOM-related complications at our centre as it caters a bulk of population from rural areas with hilly terrain which have limited access to specialized ENT care. Hence we conducted this study to evaluate various types of otogenic complications in terms of current presentation and management. The objectives of our study were to determine the various types of otogenic complications in terms of their changing trend in presentation and management.

MATERIAL AND METHODS

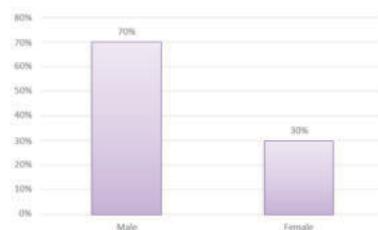
The present study was conducted in Department of ENT, GMC Srinagar from September 2020 to May 2023. A total of 30 patients of chronic otitis media with intratemporal or intracranial complications were included in the study. All patients were subjected to detailed clinical history, general physical examination, local ENT examination including tuning fork tests using 256, 512 and 1024 Hz frequency tuning forks, pure tone audiometry and EUM (Examination under Microscope). Routine lab investigations – Complete Blood Count, Renal and Liver Function tests were conducted. X-Ray Mastoid (Schuller's view) and HRCT Temporal bone was done in all patients. MRI was done wherever indicated by HRCT findings. Informed and written consent was taken from all the patients undergoing mastoidectomy. In all patients, mastoidectomy via post-aural approach was done. In patients with abscess, the contents of abscess were sent for microscopy and culture study. All patients who underwent mastoidectomy were kept in hospital for 8 days post-operatively, followed up every week for first month, then fortnightly for next two months.

RESULTS

Majority of patients in our study belonged to age group of 31-40 years, with mean age of presentation being 35.4 years.



Out of 30 patients, 21 were males and 9 were females.



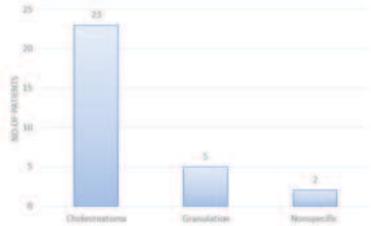
Out of 30 patients, all had pre-existing chronic otitis media; 8 in right ear, 6 in left ear, 16 in both ears.



The major presenting complaint was chronic ear discharge (100%), post aural swelling (53.3%), fever (36.6%), postaural fistula (20%), headache (20%), facial nerve palsy (10%), vertigo (6.6%) and signs of meningitis (6.6%).

Symptom	No. of patients(%)
Otorrhoea	30 (100%)
Postauricular swelling	16 (53.3%)
Fever	11 (36.6%)
Headache	6 (20%)
Postaural fistula	6 (20%)
Facial nerve paralysis	3 (10%)
Meningeal signs	2 (6.6%)
Vertigo	2 (6.6%)

Intra-operatively cholesteatoma was seen in 23patients, granulations in 5patients,non- specific mucosal findings were present in 2 patients.



Majority of patients had extracranial complications, which included postaural abscess(40%), post aural fistula (20%), facial nerve palsy (10%), labyrinthitis with LSC fistula (6.6%), and bezolds abscess (3%). Among intracranial complications, extradural abscess was seen in 10%, followed by meningitis in 6.6% and brain abscess in 3%.

Complication	No. of patients(%)
Extracranial	
Mastoid abscess	12 (40%)
Labyrinthitis with fistula	2 (6.6%)
Facial nerve paralysis	3 (10%)
Bezold's abscess	1 (3%)
Postaural fistula	6 (20%)
Intracranial	
Meningitis	2 (6.6%)
Brain abscess	1 (3%)
Extradural abscess (epidural abscess & subdural abscess)	3 (10%)

Microscopic examination and culture studies of contents of abscess revealed bacterial etiology-Staphylococcal aureus, Klebsiella pneumonia, pseudomonas aeruginosa, E.coli.



Fig-1. Postaural Fistula



Fig-2. HRCT Temporal Bone Axial View Showing Intracranial Extension



Fig-3. Patient with Postaural Swelling.

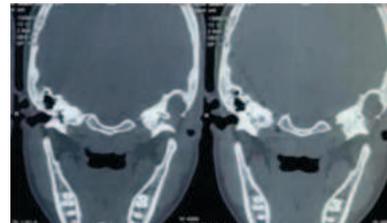


Fig-4. HRCT Temporal Bone Coronal View Showing Post-aural Mastoid Abscess with Erosion Of Mastoid Cortex

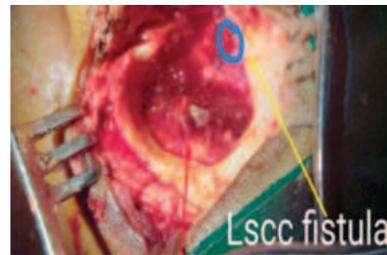


Fig-5. Intraoperative Finding of LSCC Fistula

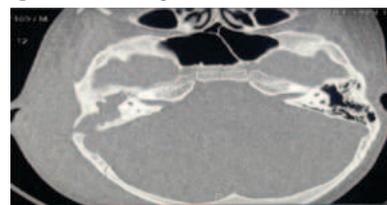


Fig-6.HRCT Temporal Bone Axial View Showing Destruction Of Lateral and Posterior Wall of Right Mastoid.

DISCUSSION

Over the past few decades, there has been a shift in the epidemiological and complication patterns of otitis media globally. The incidence of otitis media and its complications , both, have shown a decline. The decline has been greatly influenced by the rapid improvement in standards of living and development of healthcare systems. However, in developing countries like ours, reports indicate a persistence of prevalence of complications. Illiteracy and poor socioeconomic factors contribute to prevalence of the disease as well as delay in seeking treatment. This contributes to the high rate of complications seen in these patients. [5]

The most common age group affected in our study was 31-40 years of age, with an average of 35.4years. SharmaNet al.[2] reported a peak incidence in 5-10 years of age. In our study, males were predominantly affected with a male:female ratio of 2.3:1.This was higher than that reported by Sharma N et al. [2] (1.5:1), Jain A et al. [5] (1.5:1) and Wahid et al. [10] (1.3:1).This can be explained by the discordant sex ratio in our country, as well as delay in seeking treatment.

The most frequent symptoms of our patients were otorrhoea , headache and fever which were similar to other reports [3, 11, 12, 13]. However in our study post auricular swelling was present in 53% (16 patients). Many patients presented with more than one symptoms as well. CT is a proven diagnostic method of choice for evaluating

inflammatory diseases of the temporal bone. MRI is the study of choice for locating otogenic intracranial complications.

However, due to high cost and limited availability, a combination with CT scanning and MRI was not recommended in every complicated CSOM patient to exclude other coexisting intracranial complications.

In our study we found extra-cranial complications (80.4%) were much common than intracranial complications (19.6%). The most common complication encountered in our study was post aural abscess, which accounted for 40% (12 patients) of the complications.

Yorgancilar E et al. [3] in their study found mastoid abscess in 44 (27.8%) patients. The pathogenesis of mastoid abscess can be explained by direct extension through cortical bone erosion resulting in sub periosteal or subcutaneous abscess. Most common intracranial complication in our study was extradural abscess in 10% (3 patients), followed by meningitis in 6.6% (2 patients) and brain abscess (3%). There are some differences in literature as to the commonest intracranial complication. Brain abscess was the most common intracranial complication in studies by Sharma N et al. [2] (52%), Kurien et al. [8] (26%), Pennybacker et al. [7] (42.5%). Whereas meningitis was the most common intra-cranial complication in studies by Miura et al. [13], Kuczkowski et al. [9] (35.2%).

Intraoperatively, cholesteatoma was the most frequent (76.6% patients) surgical finding of both extra-cranial and intracranial complications, followed by granulation tissue (16.6% patients). Kangsanarak et al. [12] found that 80% of patients had complications associated with a cholesteatoma due to chronic otitis media. Osma et al. [13] reported that 78.5% of patients had a cholesteatoma, while 21.5% had granulation. There was however no specific intra-operative finding in 6% of patients in our study.

After clinical evaluation and imaging results, all patients with complications of CSOM were surgically treated. Parenteral antibiotics in different combinations were administered to patients immediately upon admission to the hospital. The complications of CSOM can be managed by treating the complication first followed by treating the primary source of infection surgically. In the current study a postaural approach was adopted in all patients and mainly canal wall down mastoidectomy was carried out. All patients with extra-cranial complications were treated with mastoidectomy. Facial nerve decompression was done in all 3 patients with facial nerve paralysis. Extradural abscess was drained simultaneously with mastoidectomy. Meningitis patients were given preoperative antibiotics for 2 weeks and were operated when clinical condition improved. Patient with brain abscess underwent drainage of the abscess before a mastoidectomy and was performed by the neurosurgery team.

CONCLUSION

Complications of chronic suppurative Otitis media are a great concern for clinical practice. Although incidence has decreased in recent years, clinicians do occasionally encounter complicated CSOM cases. An early diagnosis based on clinical features, CT scan and culture sensitivity and early intervention is required. High level of awareness in patients regarding these complications and utility of early clinical detection and the appropriate treatment modalities are required to decrease the morbidity and mortality.

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