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Retrospective Analysis of Patients with Complicated CSOM at Tertiary Care Centre: A Study of 79 Patients

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Abstract

Background: Chronic Suppurative Otitis Media is still a problem of concern in many developing countries. Despite all better anti-biotic therapy, complications of CSOM are still prevalent. The complications of CSOM are still potentially life-threatening and cause severe morbidity. **Purpose:** Aim of this study was the complications in patients of CSOM presenting at tertiary care center and also to study the epidemiological profile of the patients presenting with complications. **Materials:** An observational study was conducted from June 2015 to July 2021 at Dr. Vasantrao Pawar Medical College. A detailed history of the patient was taken and data analyzed. **Results:** A total of 79 patients were included in this study. About 63% of patients in the study presented with extracranial complications and 37% of patients presented with intracranial complication. The most affected age group was from 21-30 years.

Keywords: Abscess, Complications, Chronic Otitis Media, CSOM (Chronic Suppurative Otitis Media)

1. Introduction

Chronic Suppurative Otitis Media is infection of middle ear cleft which still prevalent in the developing countries. This infection not only impairs the hearing but also has long term morbid complications which are potentially life threatening. With advent of good antibiotic coverage overall incidence of complications arise due to Chronic Suppurative Otitis Media has reduced. However, it is still a health care burden in certain areas.

Complications of Chronic Suppurative Otitis Media can be broadly divided into two categories, i.e., intracranial complications and extra cranial complications

Intracranial complications of Chronic Suppurative Otitis Media are meningitis, sub-Dural abscess, extra-dural abscess, sigmoid sinus thrombosis, lateral sinus thrombosis, brain abscesses that temporal lobe abscess and cerebellar abscess[1–3].

Extra cranial complications of Chronic Suppurative Otitis Media are includes mastoiditis, mastoid abscess,

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citelli's abscess, bezold's abscess, labyrinthitis[4], facial paralysis, petrositis[5,6].

The extra cranial complications are further divided into intra-temporal and extra temporal complications. labyrinthitis, facial paralysis, petrositis encompasses under extra-cranial intra-temporal complications while mastoiditis, mastoid abscess, citelli's abscess, bezold's abscess are included in extra-cranial extra-temporal complications[7–9].

2. Aims and Objectives

- To study the common complications of Chronic Suppurative Otitis Media observed in the present tertiary care center.
- To study the epidemiological profile of patients presenting with the complications of CSOM.

3. Material and Methods

This study was carried out at Dr. Vasantrao Pawar Medical College, Hospital and Research Centre from July 2015 to June 2021. This was retrospective observational study. The patients presenting with complications of CSOM were admitted. A detailed history of all the patients was recorded. The comprehensive examination in form of otoscopic as well as microscopic examination was carried out. The audiological profile of all patients was evaluated using pure-tone audiometry.

The radiological investigation of HRCT temporal bone was carried out in the most cases to know the extent of disease. The cases having intracranial complications underwent MRI, MR angiogram and MR venogram according to the type of involvement.

3.1 Inclusion Criteria

Patient having complications of CSOM were included in the study.

3.2 Exclusion Criteria

Pregnant patients were excluded from the study.

3.3. Methodology

All the patients of complicated CSOM were included in the study. They were admitted in the hospital. Broad spectrum IV antibiotics were started on admission. These were continued for at least 14-21 days depending on the severity of the disease. In patients having abscesses such mastoid abscess, post-aural abscess etc firstly the abscess was drained followed by mastoid surgery. Patients presenting with intracranial complications were first managed neurosurgical intervention as well as broad spectrum antibiotics. The patients of otogenic abscesses i.e., extra-dural abscess, cerebellar abscess and temporal lobe abscess was first drained via neurosurgical procedure. This then followed by completion mastoid surgery.

In all the cases, canal wall down modified radical mastoidectomy with wide Concho meatoplasty was done. Here the aim of surgery was to achieve total clearance of disease and give a safe ear with self-draining cavity and to restore hearing to some extent.

4. Results

There were total 79 patients admitted in the Department of Otorhinolaryngology at Dr. Vasantrao Pawar Medical College, Hospital and Research Centre, Nashik presented with complications of CSOM from July 2015 to May 2021. Amongst these 79 patients, 45 were males and 34 were females (Figure 1).

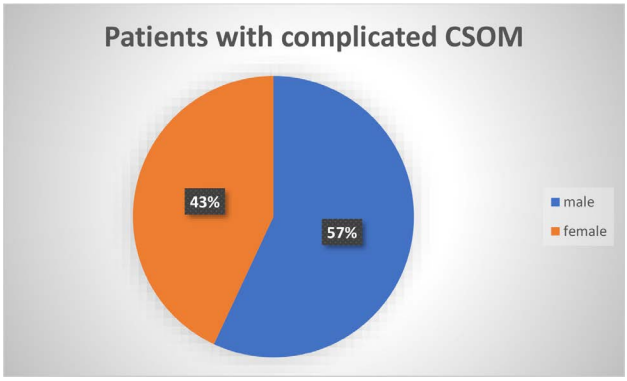

Figure 1. Gender distribution of the patients in the study.

The youngest patient in our study was 6 years old and the eldest was 69 year-old.

The most frequent age group presented in our study with complications was of 21 years to 30 years with nearly 29 percent of total patients. (Figure 2).

Above chart shows the the age wise distribution along with gender distribution of patients presented complication of CSOM.

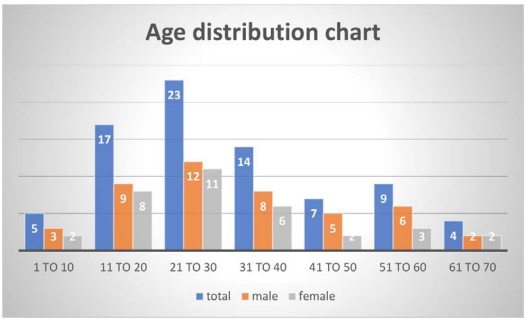

Figure 2. Bar chart depicting gender as well as age distribution of the patients.

Figure 3. Pediatric patient having right mastoid abscess.

Table 1. Table shows the frequency of various complications in our study. The following table shows the occurrence of various complications in our study

Complication	Occurrence	%
Facial Paralysis	11	14%
Labyrinthitis	8	10%
Mastoid Abscess	21	27%
Petrositis	3	4%
Temporal Lobe Abscess	14	18%
Cerebellar Abscess	10	13%
Mastoid fistula	7	9%
Lateral sinus thrombophlebitis	3	4%
Meningitis	2	3%

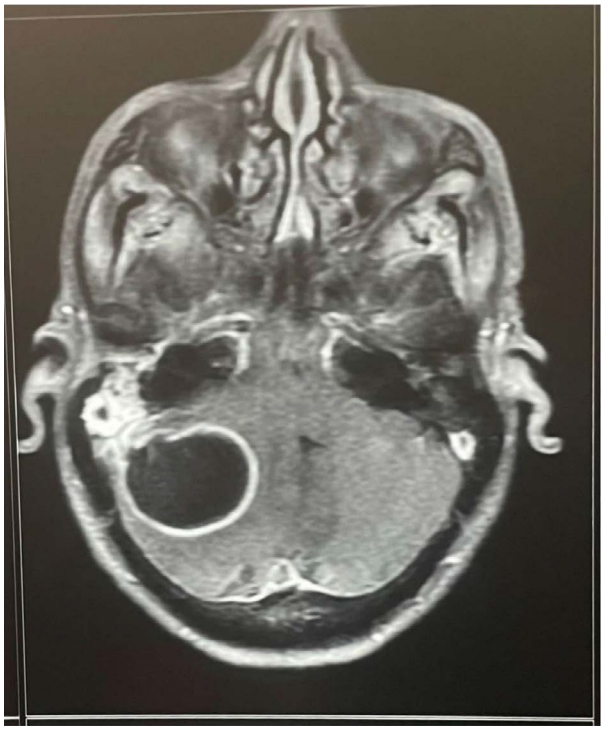

Figure 4. HRCT temporal bone showing right sided cerebellar abscess with right cholesteatoma.

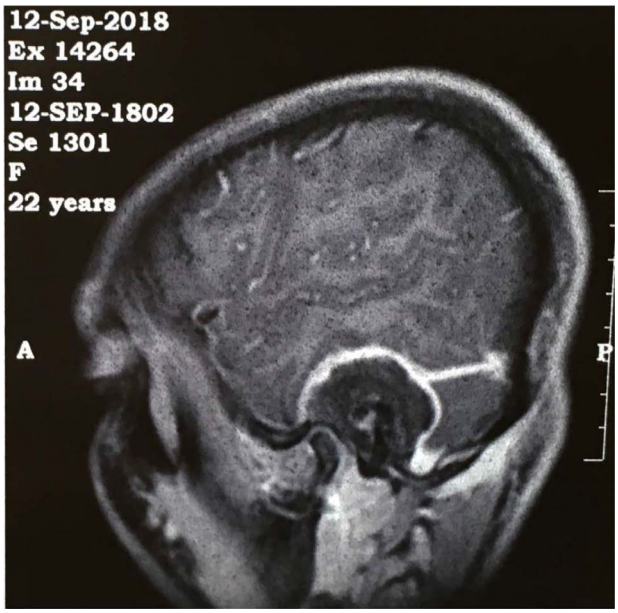

Figure 5. MRI brain showing left temporal lobe abscess secondary to patient with unsafe CSOM.

The most frequently observed extracranial complication was mastoid abscess followed by facial paralysis (Figure 3). About 63% of the patients (50) showed extracranial complications. While the most

observed intracranial complication was temporal abscess followed by cerebellar abscess (Figures 4 and 5). The 37% of the patient in the study had intracranial complications. In this group the total number of patients was 29 (Table 1).

In about 9 patients there was profound hearing loss on the side of the disease. Some 13 patients had severe mixed hearing loss. Rest all had conductive hearing loss of variable degree. The 3 patients having labyrinthitis had profound hearing loss.

In post-op period most of the patients recovered well. Only 5 patients developed several granulations in the cavity, requiring frequent application of gentian violet and microscopic ear cleaning. However, 2 patients developed wound gapping and had post-aural fistula. In these 2 patients suturing was done in the later stage to close the gap.

5. Discussion

In study of Parmar BD et.al male gender was more affected in than the females at the ratio 1.57[10]. Also, in the studies of Sharma et al and YorgancAlar et al it was found male dominated in prevalence of complications of CSOM[5,7]. In the present study the male were more affected than females and the ratio was 1.32.

Furthermore, it our study it was found that age group 21-30 was the most affected. While in the other studies the younger group was affected. However, the noticeable thing in our study was the younger patients developed the complication. This can be attributed to shallower mastoid antrum[1,11,12].

The patients presented with symptoms of long-standing ear discharge associated with post-aural pain and headache. In the later stages when there was progression of disease patient had specific symptoms like post-aural swelling, copious pus, headache, fever and vomiting. The knowledge about this symptomology amongst primary care physicians could help in early diagnosis of the disease and possibly prevention of the occurrence of complications[13,14].

Also in our study, extracranial complications were more as compared to intracranial complications. In study of Parmar BD et.al also extracranial complications were more common than intracranial complications. The most commonly observed extracranial complication in study of Parmar BD et.al was post-aural abscess while most common intracranial complication was meningitis[10]. In present study the most common extracranial complication was mastoid abscess and temporal lobe abscess was the most frequently observed intracranial complication. The study of Sharma et.al and YorgancAlar et al reported the most common intracranial complication as brain abscess and lateral sinus thrombophlebitis[5,7,10]. In the other studies the lateral sinus thrombosis is third or fourth most intracranial presentation usually presented. In our present study also, this complication stands at fourth place[15,16].

The overall mortality due to intracranial complications of CSOM in our study was nil. Even in the study Greenberg et al the mortality due to intracranial complication was zero. The early detection, with better imaging modality, use of effective antibiotic with proper microbial coverage and surgical intervention has overall reduced the morbidity as well as mortality of the patients[4,9,17].

6. Conclusion

Despite the availability of better antibiotics, we still witness complications of CSOM. In India many regions are facing lots of patients with complicated CSOM, mainly due to lack of awareness of about the ear disease. Timely diagnosis of patients of CSOM, treating them with appropriate anti-biotics and surgically managing them as earliest as possible will prevent the patients to complicate. Those patients, who were present with complications of CSOM, should be promptly treated with at times help of neuro-surgical team. The patients should be started with higher intra-venous antibiotics, radiological investigations like HRCT temporal bone should be carried out in all cases. Patient having the radical surgical approach to be adopted for managing these patients. Modified radical mastoidectomy with wide Concho meatoplasty is treatment of choice.

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