PATTERN OF COMPLICATIONS IN INDIAN PATIENTS WITH CHRONIC SUPPURATIVE OTITIS MEDIA (CSOM)

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ABSTRACT

Background: Chronic suppurative otitis media, or CSOM, is a dangerous illness that can lead to a number of problems. Antibiotics are used to treat CSOM, and their side effects have led to rare otitic problems that still occur and require early detection and timely treatment.

Aim: Assessing the incidence, frequency, and mortality of complications linked to chronic suppurative otitis media (CSOM), a significant health issue in India, was the goal of the current study.

Methods: During the specified study period, 7940 patients with a confirmed diagnosis of CSOM and reported problems following CSOM were evaluated in this retrospective investigation. Treatment outcomes, treatment, complications experienced, investigations, clinical symptoms, gender, and age were among the data collected for each participant. Following data collection, participants' CSOM problems were separated into two groups: EC (extracranial complications) and IC (intracranial complications).

Results: Of the 7940 participants treated with CSOM at the Institute, 92 were found to have problems, with intracranial complications accounting for 69.6% (n=64) and extracranial complications for 47.8% (n=44). Extracranial and intracranial problems were observed in 16 patients, with a 1.2% frequency and a 2:1 male to female ratio. With 32.6% (n=30) of the individuals, CSOM problems were most prevalent in those between the ages of 21 and 30. Meningitis was the most frequent intracranial consequence, occurring in 32.6% (n=30) and 15.2% (n=14) of the participants, respectively, followed by subdural abscess.

Conclusion: while CSOM problems have decreased as a result of stronger, more contemporary antibiotics and aggressive surgical illness care, death and morbidity rates remain high and CSOM complications are still often observed in Indian individuals. Increased disease morbidity and death may arise from a delayed diagnosis and treatment of intracranial problems.

Keywords: complications, otitis media, subdural abscess, mastoiditis, meningitis, and CSOM

INTRODUCTION

With the use of stronger and more recent antibiotics, the incidence of chronic suppurative otitis media (CSOM) and its related problems has significantly decreased. However, these infections provide a significant healthcare cost and difficulties with regard to the identification and treatment of CSOM in poor countries like India. Additionally, because of its consequences, CSOM is a potentially serious and substantial condition.[1]

Antibiotic use in CSOM has been crucial in managing the condition and its related complications. Although otitic complications are becoming less common, they are still observed, and early

detection of the clinical patterns associated with these complications has led to more effective treatment.[2]

Acute infection exacerbation is typically a symptom of chronic ear illnesses such chronic suppurative otitis media (CSOM). Since the underlying ear disease must be well managed to prevent the recurrence of the related problems, this aggravation has created additional therapeutic challenges.[3]

When a middle ear infection progresses to cerebral problems, the disease may spread hematogenously, through preexisting channels, or as a direct extension from the middle ear or mastoid cavity.

Newer otologists may diagnose and treat otogenic IC (intracranial consequences) later than they should since they are unfamiliar with it. 4. Assessing the incidence, frequency, and mortality of complications linked to chronic suppurative otitis media (CSOM), a significant health concern in India, was the goal of the current study.

MATERIALS AND METHODS

Assessing the incidence, pattern, and mortality of complications related to chronic suppurative otitis media (CSOM), a significant health concern in India, was the goal of the current retrospective assessment study.

The study participants came from the Institute's ENT Department. Prior to participation, all individuals gave their written and verbal informed consent. 7940 participants with a confirmed diagnosis of CSOM who reported problems following CSOM at the Institute during the study period were evaluated. It eliminated all participants who did not provide informed consent to participate in the study, participants who did not show up for follow-up, and participants with incomplete data and medical records.

Gender, age, investigations conducted, disease symptoms, treatment administered, complications observed, and treatment outcomes were among the information collected and taken from the study participants' medical records upon their final inclusion.

92 participants who experienced difficulties due to CSOM were then separated from the research. IC (intracranial complications) and EC (extracranial complications) were the two main groups into which participants with CSOM problems were further separated. Meningitis, brain abscess, subdural abscess, and/or lateral sinus thrombosis were intracranial sequelae. Mastoiditis, labyrinthitis, facial nerve paralysis, and petrositis were extracranial consequences. CT (computed tomography) scans of the brain and petromastoid were performed on most study participants, and the results were accessible. Steroids and antibiotics were administered to the majority of the subjects as needed and suitable.

Physicians used steroids and antibiotics to treat meningitis patients. ENT surgeons performed routine aural toileting and applied antibiotic dressings. Both burr hole aspiration with craniotomy and burr hole aspiration without craniotomy were surgical procedures performed on subjects who had intracranial abscesses. Subjects who experienced extracranial problems underwent mastoid operations. Ontological and neurosurgery procedures were performed concurrently on two individuals.

The collected data was statistically evaluated using the Student t-test, ANOVA (analysis of variance), Mann-Whitney U test, Chi-square test, and SPSS (Statistical Package for the Social

Sciences) software version 24.0 (IBM Corp., Armonk, NY, USA) for evaluating descriptive measures.

To evaluate correlation across different factors, the Pearson correlation coefficient was employed. The findings were presented as frequency, percentages, mean, and standard deviation. A p-value of less than 0.05 was taken into account.

RESULTS

Assessing the incidence, pattern, and mortality of complications related to chronic suppurative otitis media (CSOM), a significant health concern in India, was the goal of the current retrospective assessment study. During the specified study period, 7940 participants with a confirmed diagnosis of CSOM and reported problems following CSOM were evaluated in the current retrospective investigation at the Institute.

1.2% (n=92) of the 7940 individuals treated at the Institute with CSOM were found to suffer problems. Of the study participants, 69.6% (n=64) experienced intracranial issues, whereas 47.8% (n=44) experienced extracranial complications. Of the 92 individuals, 16 had multiple complications. The study participants had a 2:1 male to female ratio.

When the age distribution of the study participants was examined, it was found that the majority of them were between the ages of 21 and 30 (32.6%; n = 30), followed by 30.4% (n = 28) in the 11–20 age range, 21.7% (n = 20) in the 1–10 age range, 8.70% (n = 8) in the 41–50 age range, and at least 6.50% (n = 6) in the 31–40 age range (Table 1). Meningitis was the most frequent intracranial consequence, occurring in 32.6% (n=30) of the study participants, followed by a subdural abscess in 15.2% (n=14). Mastoiditis was the most frequent extracranial problem, occurring in 37% (n=34) of the study participants.

Otorrhea was the most common clinical symptom, occurring in 100% of participants (n=92), followed by fever in 91.3% of participants (n=84), convulsions in 69.6% of participants (n=64), loss of consciousness in 65.2% of participants (n=60), headache in 63% of participants (n=58), otalgia in 43.5% of participants (n=40), hearing loss in 41.3% of participants (n=38), post-aural swelling in 30.4% of participants (n=28), facial paralysis in 10.9% of participants (n=10), and vertigo in 2.2% of participants (Table 2).

According to the study's findings, the intracranial death rate among the 18 participants was 28.1%. Every day, topical antibiotics, aural toileting, steroids, and antibiotics were used to treat all 30 meningitis patients.

Burr hole aspirations occurred in 19.6% (n=18) of the participants with intracranial problems, while craniotomy and drainage occurred in 13% (n=12) of the subjects. 17.4% (n=16) and 13% (n=12) of the participants experienced cortical mastoidectomy and incision and drainage, respectively, as a result of extracranial complications.

DISCUSSION

During the specified study period, 7940 participants with a confirmed diagnosis of CSOM and reported problems following CSOM were evaluated in the current retrospective investigation at the Institute. 1.2% (n=92) of the 7940 individuals treated at the Institute with CSOM were found to suffer problems. Of the study participants, 69.6% (n=64) experienced intracranial issues, whereas 47.8% (n=44) experienced extracranial complications.

Of the 92 individuals, 16 had multiple complications. The study participants had a 2:1 male to female ratio. These findings were similar to those of earlier research by Verhoeff M et al. (2006) and Adoga A et al. (2014), who evaluated participants with demographic information similar to the current study in their individual investigations involving CSOM.

According to the evaluation of the age distribution of the study participants, 32.6% (n=30) of the subjects were between the ages of 21 and 30. This was followed by 30.4% (n=28) of the subjects in the 11–20 age range, 21.7% (n=20) of the subjects in the 1–10 age range, 8.70% (n=8) of the subjects in the 41–50 age range, and at least 6.50% (n=6) of the subjects in the 31–40 age range. Meningitis was the most frequent intracranial consequence, occurring in 32.6% (n=30) of the study participants, followed by a subdural abscess in 15.2% (n=14). Mastoiditis was the most frequent extracranial problem, occurring in 37% (n=34) of the study participants.

These findings were in line with those of Monasta L et al. (2012) and Mostafa BE et al. (2009), whose studies were similar to the current study in terms of the age distribution and distribution of CSOM problems.

Otorrhea was the most common clinical symptom, occurring in 100% of the subjects (n=92). This was followed by fever in 91.3% of the subjects (n=84), convulsions in 69.6% of the subjects (n=64), loss of consciousness in 65.2% of the subjects (n=60), headache in 63% of the subjects (n=58), otalgia in 43.5% of the subjects (n=40), hearing loss in 41.3% of the subjects (n=38), post-aural swelling in 30.4% of the subjects (n=28), facial paralysis in 10.9% of the subjects (n=10), and vertigo in 2.2% of the study participants.

These results were consistent with the findings of Ologe FE et al. (2003) and Dubey SP et al. (2007), whose authors also found clinical symptoms similar to those in the current investigation. Intracerebral mortality among research participants was found to be 28.1% (n=18). Every day, topical antibiotics, aural toileting, steroids, and antibiotics were used to treat all 30 meningitis patients. Burr hole aspirations occurred in 19.6% (n=18) of the participants with intracranial problems, while craniotomy and drainage occurred in 13% (n=12) of the subjects. 17.4% (n=16) and 13% (n=12) of the participants experienced cortical mastoidectomy and incision and drainage, respectively, as a result of extracranial complications.

These outcomes were consistent with those of Trimis G et al. (2003) and Kong K et al. (2009), whose findings on the mortality and complications of CSOM were similar to those of the current study.

CONCLUSIONS

The present study, within its limitations, concludes that with more potent and modern antibiotics and aggressive surgical disease management, complications of CSOM have reduced, however, mortality and morbidity rates are high with CSOM complications still being a common finding in Indian subjects. A delayed diagnosis and management of intracranial complications can result in increased mortality and morbidity of disease. However, further longitudinal studies are warranted in the future with larger sample sizes and longer monitoring to reach a definitive conclusion.

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S. No	Age range (years)	Number (n)	Percentage (%)
1.	**1-10**	20	21.7
2.	**11-20**	28	30.4
3.	**21-30**	30	32.6
4.	**31-40**	6	6.50
5.	**41-50**	8	8.70
6.	**Total**	92	100

Table 1: Age distribution in study subjects with CSOM complications

S. No	Symptoms	Number (n)	Percentage (%)
1.	**Convulsions**	64	69.6
2.	**Fever**	84	91.3
3.	**Post aural swelling**	28	30.4
4.	**Vertigo**	2	2.2
5.	**Otalgia**	40	43.5
6.	**Loss of consciousness**	60	65.2
7.	**Hearing loss**	38	41.3
8.	**Facial paralysis**	10	10.9
9.	**Headache**	58	63

10.	**Otorrhea**	92	100

Table 2: Clinical symptoms in study subjects with CSOM complications