

STUDY OF EXTRA CRANIAL COMPLICATIONS OF CHRONIC SUPPURATIVE OTITIS MEDIASanal Mohan¹, Sahni D. K², Lijin Radhakrishnan³, Unnikrishnan T⁴¹Assistant Professor, Department of ENT, Travancore Medical College, Kollam.²Associate Professor, Department of ENT, Travancore Medical College, Kollam.³Senior Resident, Department of ENT, Travancore Medical College, Kollam.⁴Professor & HOD, Department of ENT, Travancore Medical College, Kollam.**ABSTRACT****BACKGROUND**

Chronic Suppurative Otitis Media (CSOM) refers to a chronic inflammatory condition of the middle ear and mastoid cavity. There is acute inflammation of middle ear leading to irritation and then inflammation of the mucosa producing oedema. Breakdown of the epithelium causes ulceration subsequent infection and formation of granuloma/granulation tissue. Granuloma formation leads to the development of polyps in middle ear. Factors influencing development of complications are, age, low socio-economic status, virulence of organism, immune compromised host, previous surgeries, fractures, fistulas, cholesteatoma. The complications developed spread through various modes like direct bone erosion, thrombophlebitis, preformed pathways, congenital bony defects, sutures of skull that remains patent, old fractures-heal by fibrosis, defects caused by surgery, oval and round windows, infection from labyrinth. The extracranial complications which can be encountered in chronic suppurative otitis media are, acute mastoiditis, petrositis, facial nerve palsy, labyrinthitis and discharging sinuses.

MATERIALS AND METHODS

Sample size for the present study was fifty four. This study was done in the Department of ENT, Travancore Medical College, Kollam. This study was done from January 2015 To January 2016. Detailed clinical history was taken and the clinical examination was conducted. The extracranial complications were noted and reported.

RESULTS

In the present study, maximum number of cases belonged male sex which was thirty eight cases. Sixteen cases belonged to female sex. Maximum number of cases which amounted to forty one in number belonged to age group zero to twenty years, followed by age group twenty to forty years which amounted to eleven cases, followed by age group forty to sixty which amounted to two cases. No cases were reported in age group more than sixty years in our study. Based on socioeconomic data, maximum number of cases belonged to low socio-economic group which amounted to thirty nine cases. Nine cases belonged to middle class and six cases belonged to high socio-economic group. Based on extra cranial complications, twenty one cases presented with acute mastoiditis features, nineteen cases presented with discharging sinuses. Eight cases presented with features of petrositis, four cases presented with features of labyrinthitis, and two cases presented with facial nerve palsy.

CONCLUSION

In this study it was noted that usually the poor who suffer, may be because of financial constraints, lack of health care facilities or general neglect on the patient's part. Maintaining proper hygiene and early treatment can reduce the number of complications in such cases.

KEYWORDS

Chronic suppurative otitis media, Male sex, Poor socio economic status, Mastoiditis, Health care.

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BACKGROUND

Chronic suppurative otitis media (CSOM) refers to a chronic inflammatory condition of the middle ear and mastoid cavity.^[1] Pathophysiology of CSOM involves the process of

an acute inflammation of middle ear leading to irritation and then inflammation of the mucosa producing oedema. Breakdown of the epithelium causes ulceration subsequent infection and formation of granuloma/ granulation tissue. Granuloma formation leads to the development of polyps in middle ear. The process might continue if no intervention is done leading to destruction of surrounding tissues and hence the subsequent complications of CSOM.^[2] The cases of complications have reduced greatly with the advent of antibiotics and revolution in healthcare sector but still there are quite significant number of cases with complications.

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Factors Influencing Development of Complications:

- Age: Complications are common in 1st decade and in the elderly due to low immunity.
- Low socio economic status: Overcrowding, lack of health awareness, poor hygiene reduced access to healthcare.
- Virulence of organisms: Antibiotic resistance, uncontrolled acute infections.
- Immunocompromised status of host: AIDS, bad glycaemic control, transplant patients, chemotherapy patients.
- Existing pathways: Previous surgeries, fistulas and fractures.
- Cholesteatoma: Causes deeper penetration by destroying the bone.

The Complications Developed Spread through Various Modes as below:

- Direct bone erosion: Hyperaemic decalcification seen in acute infections and erosion by cholesteatoma in chronic infection.
- Thrombophlebitis: This is the commonest mode of spread via the dural venous sinuses.
- Preformed pathways:
 - Congenital bony defects.
 - Sutures of skull that remains patent.
 - Old fractures: Heal by fibrosis.
 - Defects caused by surgery.
 - Oval and round windows.
 - Infection from labyrinth.

Complications of chronic suppurative otitis media can be classified into two groups as:**A. Extra cranial.**

1. Acute Mastoiditis.
2. Petrositis.
3. Facial nerve palsy.
4. Labyrinthitis.

B. Intracranial.

1. Meningitis.
2. Extradural abscess.
3. Subdural abscess.
4. Cerebral abscess.
5. Lateral sinus thrombophlebitis.
6. Hydrocephalus.

A. Acute Mastoiditis: When there is a spread of infection from the lining mucosa of the mastoid air cells to the bony walls of the mastoid air cell it is known as mastoiditis. Highly virulent organisms, lowered host resistance as in systemic diseases like diabetes mellitus is the typical setting where mastoiditis is seen. Well-developed mastoid air cells have to be present for mastoiditis to develop. Children are highly susceptible with group B - β haemolytic streptococci being the most common causative micro-organism. Acute mastoiditis can give rise to post auricular abscess, zygomatic abscess, Bezold's abscess, Meatal abscess, Para pharyngeal and retro pharyngeal abscesses.

B. Petrositis: Spread of infection to the petrous part of temporal bone from an existing middle ear and mastoid infection is called petrositis. There are two tracts in the bone from mastoid cells to petrous part through which the infection spreads.

C. Facial Paralysis: It happens as a result of destruction of its bony canal and the pressure on the nerve inside its canal due to acute or chronic otitis media.

D. Labyrinthitis:

Circumscribed Labyrinthitis (Fistula of Labyrinth): Bony capsule of labyrinth is thinned out by erosion. The causes could be CSOM with cholesteatoma, tumours of middle ear, trauma to labyrinth.

Diffuse Serous Labyrinthitis: It is diffuse inflammation of the labyrinth without any pus formation reversible on treatment easily.

Diffuse Suppurative Labyrinthitis: A diffuse pyogenic infection with loss of vestibular and cochlear functions permanently. Follows a diffuse serous labyrinthitis or a pyogenic infection through fistula or surgery.^[1] In view of such complications which are still existing, we have conducted this study to evaluate the complications of chronic suppurative otitis media in our institute and review the situation in our institute.

AIMS AND OBJECTIVES: To study the extracranial complications of otitis media.

MATERIALS AND METHODS: Sample size for the present study was fifty four. This study was done in the Department of ENT, Travancore Medical College, Kollam. This study was done from January 2015 To January 2016. Detailed clinical history was taken and the clinical examination was conducted. The complications were noted and reported.

Inclusion Criteria: Patients with extracranial complications of otitis media.

Exclusion Criteria:

1. Patients with intracranial complications.
2. Patients with otitis media without complications.

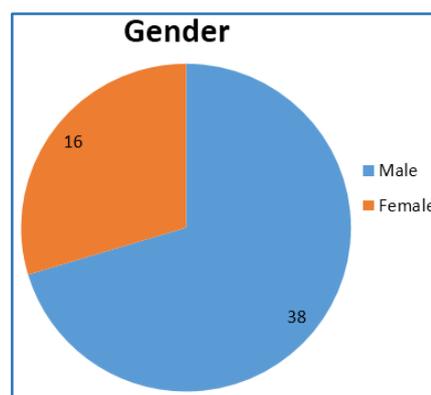


Image 1: Showing Gender Distribution

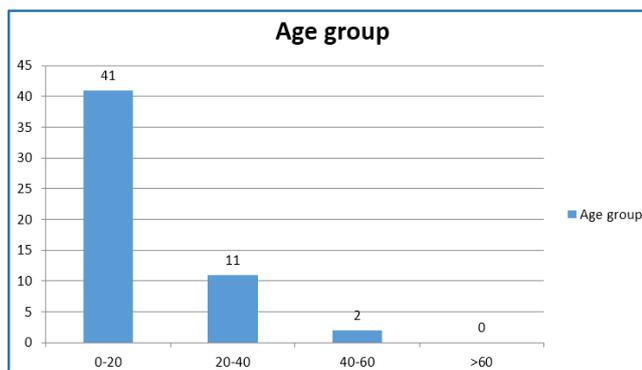


Image 2: Showing Age Distribution

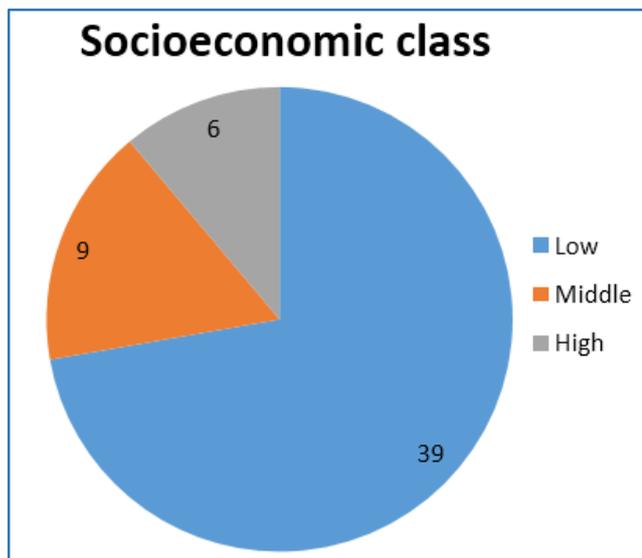


Image 3: Showing Socioeconomic Status

Complication	Frequency
Acute mastoiditis	21
Petrositis	8
Discharging sinuses	19
Facial nerve palsy	2
Labyrinthitis	4

Table 1: Showing Extra Cranial Complications

DISCUSSION

In the present study, maximum number of cases belonged male sex which was thirty eight cases. Sixteen cases belonged to female sex. Maximum number of cases which amounted to forty one in number belonged to age group zero to twenty years, followed by age group twenty to forty years which amounted to eleven cases, followed by age group forty to sixty which amounted to two cases. No cases were reported in age group more than sixty years in our study. Based on socioeconomic data, maximum number of cases belonged to low socio-economic group which amounted to thirty nine cases. Nine cases belonged to middle class and six cases belonged to high socio-economic group.

Based on extra cranial complications, twenty one cases presented with acute mastoiditis features, nineteen cases presented with discharging sinuses. Eight cases presented

with features of petrositis, four cases presented with features of labyrinthitis, and two cases presented with facial nerve palsy. The cases were treated surgically. In a study done by Mostafa BE, El Fiky LM and El Sharnouby MM most common extra cranial complication was mastoiditis which is similar to our study.^[2] Similar results were seen in a study conducted by Different authors.^{[3],[4],[5],[6]}

CONCLUSION

The following conclusions were drawn from our study.

- Maximum number of cases affected were Males.
- Maximum number of cases affected belonged to age group zero to twenty.
- Maximum number of cases belonged to low socio economic status.

In a developing country like ours, chronic suppurative otitis media is a health problem which is ignored by many. As noticed in our study, it is usually the poor who suffer, may be because of financial constraints, lack of health care facilities or general neglect on the patient’s part. Maintaining proper hygiene and early treatment can reduce the number of complications in such cases and also reduce the financial burden for the patients.

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