CLINICAL PROFILE OF PATIENTS WITH COMPLICATIONS FOLLOWING OTITIS MEDIA

B. S. Gandhi¹, A. K. Agarwal²

ABSTRACT : *The paper deals with clinical profile of 56 patients with complications following otitis media. The clinically proved cases with complications were subjected to detailed radiology and bacteriology examination. The course of the disease was correlated with its clinical behaviour, microbial flora and treatment required.*

Otitis Media is defined as inflammation of middle ear cleft, regardless of the cause or duration of the disease. A complication is said to have occurred when the disease process extends beyond the mucoperiosteum of the cleft.

Complications resulting from acute or chronic suppurative disease within the pneumatized spaces of the temporal bone although less in the antibiotic era, however, are often serious; and to prevent incipient complications and to diagnose existing ones properly at the earliest possible time, the physician needs a high level of suspicion and a thorough understanding of pathogenesis.

When discharging ear ceases to drain, the physician should not necessarily be happy because discharge might cease due to inward extension. It is well known that, while chronic otitis media is sometimes more apt to extend inwards, nevertheless, acute otitis media can also do so.

A suppurative process in the ear has access to the CNS by direct extension through the bone, by either cholesteotoma or chronic osteomyelitis, though spread by thrombosis of small venules from the dura, transverse sinus and also through preformed pathways such as through the labyrinth, the endolymph channels and developmental or traumatic bony defects also occur.

MATERIALS AND METHODS

The present study was conducted in the Department of Otolaryngology, MAMC and associated hospitals. A total of 56 patients (M:F :: 38:18), requiring ENT services following complications of otitis media were included in this study.

Detailed history about the complaints of the patient was taken down stressing more on the history of otorrhoea, tinnitus and headache but vomiting, neck rigidity, fever, alternation of sensorium were also noted. History of treatment received and its responses are also taken down.

General physical examination was carried out to assess the general health and nutrition and to correct any obvious deficiencies. Ear examination was done in detail. Character of the discharge, examination of TM (quadrant wise) was also recorded. EUM was done in all cases to confirm the otoscopic findings.

Tuning fork tests were done to detect the type of deafness, CNS examination was done in detail wherever required. Pure tone audiometry was done wherever possible. X-ray mastoids were done to assess the cellularity, mastoiditis and or cavity if any, CT scan was done wherever required.

A final diagnosis was made on the basis of history, clinical findings and investigative reports.

All patients were followed up for atleast six months. On each of the subsequent visits, general physical, detailed ear and CNS examination were done.

OBSERVATIONS

Among 56 patients included in our study, a total number of 64 complications were seen. Seven patients had more than one complication, thus confirming the need to examine all patients with complication in great detail.

Epidemiologically, our data reaffirmed that like the preantibiotic era, complications occur predominantly in the paediatric patients. Of the 56 patients in our study, as high as 38 patients were under the age of 15. The main age of presentation was 14 years. There was a predominance of males in our study with 38 males as compared to 18 females.

As many as 41 patients had a long-standing history of otorrhoea. There could be a correlation between recurrent attacks of otitis media and onset of complication.

¹Registrar, Dept. of ENT, L. H. M. C., ²Director Professor, Dept. of ENT, M. A. M. C., New Delhi.

All patients with different complications were subjected to pure tone audiometry. 60% of the patients were found to be having hearing loss varying between 25-40db.

X-ray mastoids were abnormal in all except one patient (Sclerosis of the mastoids in 32, Temporal bone destruction in 11 and Cellular mastoid in 10 patients). The etiological agent in the mastoids infections were identified from the ear or the abscess on 41 instances. *S. Pyogenes* was cultured on 9 occasions whereas *Staph Aureus* was isolated on 15 different occasions.

Acute mastoiditis was found to be the most common complication and was seen in as many as 45% cases. Out of these, 24 had post auricular abscess and five had already developed a post-auricular fistula.

Acute mastoiditis accompanied or followed acute pathology in 12 cases whereas it followed chronic pathology in 17 cases. Granulations were seen in 14 patients, whereas cholesteotoma was seen in 13 cases. In 2 cases, both were found to be the offending pathology. 8 patients required only incision and drainage plus antibiotics, 4 required cortical mastoidectomy, another 5 underwent MRM whereas 12 required both I&D and MRM.

Facial paralysis was observed in 10 cases and it followed chronic otitis media in all cases. Granulation tissue seemed to play a bigger role and was present in 6 cases whereas cholesteotoma was found in 3 cases. 3 cases on histopathological examination were found to be suffering from tubercular mastoiditis. One of these had cervical lymphadenopathy, which on FNAC revealed tubercular mastoiditis. One of these had cervical lymphadenopathy which on FNAC revealed tubercular pathology.

Table - I
Types of complications

Intratemporal	Number of cases
Mastoiditis	29
Facial Paralysis	10
Labyrinthitis	3
Intracranial	Number of Cases
Brain Abscess	6
Extradural Abscess	5
Subdural Abscess	1
Meningitis	10

REL OF TYPE OF COMP & PATHOLOGY

Fig. I : Relationship of type of complication of type of pathology

RELATIONSHIP OF TYPE OF COMPLICATION & TYPE OF DISEASE

Fig. II : Complication of Otitis Media

5 cases gradually recovered in the postoperative period following facial nerve decompression and 2 cases recovered spontaneously during their stay in the ward while on antibiotics. These last 2 cases were latter subjected to mastoid exploration. In one of our cases facial nerve grafting was done, whereas, in another case facial nerve was found to be surrounded by extensive granulations. This patient was left alone for a period stage grafting but never came for follow up. One of our patients left the ward early before she could be operated.

Meningitis occurred in 10 cases, out of which 8 followed chronic pathology and another two followed acute pathology. 80% cases were under the age of 15 years. Granulations was present as offending pathology in 6 cases whereas cholesteotoma was seen in 3 cases. One patient with posterosuperior cholesteotoma on otoscopic examination died within hours of presentation.

Neck stiffness was the most important sign of meningitis

and was noted in all older children. Nausea, vomiting and disorientation were common symptoms. The lab diagnosis of meningitis was based on CSF findings.

Brain abscess was observed in 6 cases and all the patients had chronic ear disease. Of these, 4 had cholesteotoma as causative pathology and one had granulations. Four cases had cerebral abscess and two had cerebellar abscess, all the abscesses were on the same side as the diseased ear. Clinical manifestation resulted from both suppurative and space occupying lesion. One patient died within hours of presenting to emergency. All the patients underwent preliminary neurosurgery pus tapping followed by mastoidectomy.

Three patients of chronic ear disease had developed labyrinthitis. All 3 had cholesteotoma as offending pathology. They presented in emergency with severe vertigo and nausea and even had spontaneous nystagmus. There was total loss of hearing (sensorineural). Relief from vertigo was seen after 3 weeks. All patients were initially given antibacterial therapy and labyrinthine sedatives followed by mastoid exploration.

Also seen were 5 cases of extradural abscess again following chronic ear pathology. All patients with a limited sinus plate or dural plate extradural abscess, found incidentally during mastoid surgery were included in this study. In 3 of the cases cholesteotoma was found to be the offending pathology and in another 3 granulations were seen on surgical exploration.

One patient had developed subdural abscess and was treated by antibiotic therapy and drainage of subdural collection. Mastoid exploration of this patient revealed cholesteotoma as offending pathology.

CONCLUSION

Complication of suppurative otitis media arise when infection spreads from the middle ear cleft to structures from which it is normally separated by bone. Before antibiotics were used, these complications arose more frequently from acute middle ear suppuration than from chronic middle ear disease. Nowadays, most otologic experience indicates that chronic middle ear disease is a greater hazard. In our study 76% of the complications were following chronic ear disease whereas 24% were following acute ear disease. Cholesteotoma was found to be more destructive, as it was seen in 48% cases and

both granulation and cholesteotoma was seen in 15% complications.

Acute mastoiditis was the commonest complication seen and followed both acute and chronic ear disease. The most common mode of presentation was post aural swelling behind and above the ear. Meningitis was the most common intracranial complication and in 8 of the ten cases, it was seen in children of less than 15 years. Again it was common following chronic ear disease. The most common mode of presentation observed was fever & neck stiffness. Facial paralysis, brain abscess and labyrinthitis were also equally seen.

X-rays were a useful adjunct to diagnosis. Sclerosis was the commonest finding followed by cholesteotoma cavity. CT Scans were found to be mandatory to rule out intracranial complications. Staph Aureus was found to be the commonest organism on bacteriological studies.

The treatment either medical or surgical was decided on the merit of the case individually. Most of the cases with acute pathology were given antibiotic coverage followed by operative intervention. Two patients in our study died giving an overall mortality rate of 4%.

In short, it was found that complications of otitis media though an age old disease, still presented frequently with challenging aspects of diagnosis and treatment.

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Address for Correspondence

B. S. Gandhi
B-5/77, Safdarjung Enclave,
New Delhi - 110 029.