

Exploratory Mastoidectomy In Chronic Suppurative Otitis Media Of Atticoantral Type

M Ahmad M Amjad A Hameed
department of ENT Mayo Hospital, Lahore
Correspondence to Mohammed Amjad

This is a study of 42 patients of atticoantral type of chronic suppurative otitis media diagnosed on the basis of clinical features and investigations. On exploration of mastoid, 10, of them ended up in just cortical mastoidectomy. 6 patients underwent modified radical mastoidectomy while in the remaining 26 patients the final outcome was a radical mastoidectomy.

Key Words:- Mastoidectomy chronic suppurative otitis media.

Chronic suppurative otitis media is typically a disease, insidious in onset, characterised by almost persistent aural discharge and deafness ending up in many sequelae and complications if untreated. The existence of chronic suppurative otitis media in pre historic times has been clearly documented.(1).

The treatment policy of chronic suppurative otitis media has witnessed a profound change over the last 100 years, from the early attempts at surgical exposure of the middle ear in 1889 to the present day techniques of tympanoplasty in persistent but inactive disease and the "canal up" or the "canal wall down" technique in cholesteatoma surgery.(2).

In earlier days due to poor understanding of the pathogenesis of disease and the non-availability of antimicrobial drugs, radical mastoidectomy used to be a common practice even at the expense of hearing loss. The introduction of antimicrobial therapy has revolutionized the treatment of chronic suppurative otitis media and the incidence of complications has decreased tremendously. It has also changed the radical surgical approach in the treatment of chronic suppurative otitis media.

The present day concept of the management of chronic suppurative otitis media, therefore, demands a careful assessment of the clinical presentation of disease, the extent of destructive pathological process and the complications, if any, the nature of microbial flora and the functional deficit. The indications of surgical intervention are basically two fold, the restoration of function in tubotympanic pathology and rendering the ear safe even at the cost of loss of function in atticoantral disease. Exploratory mastoidectomy will be required in the second group in following settings:

1. The presence of threatened or actual complications.
2. The presence of irreversible pathology in the mastoid or middle ear such as cholesteatoma, osteomyelitis or sequestrations.
3. The lack of response to an adequate medical treatment indicating the presence of a surgical pathologic condition. Cortical mastoidectomy (simple mastoidectomy, schwartz's operation) is normally employed for the treatment of acute mastoiditis which has not responded to adequate conservative treatment in six weeks time. It is employed to treat, some times

chronic suppurative otitis media of short duration where persistent otorrhea is believed to be due to overflow from a reservoir of infection in the mastoid air cells.

Classical radical mastoidectomy is required when the disease is so extensive as to demand total removal of middle ear structures except foot plate of stapes or when complications need to be dealt with. It involves the principles of adequate exposure, excision and permanent exteriorization of the disease.

Modified radical mastoidectomy (atticoantral) describes those procedures in which removal of tissues stops short of middle ear structures deemed capable of survival for preservation or augmentation of functional aspects of middle ear. Both these techniques are called as canal wall down procedures. It is based on the principle of permanent exteriorization of disease. These contrast with canal wall up or closed technique (combined approach mastoidectomy) where the disease is removed and its route of access is shut off so that no open cavity is left in communication with exterior.

Patients and Methods:-

42- patients were included in this study at random. Those patients who were diagnosed to be having tubotympanic type of disease, responding well to conservative treatment, were excluded from this study. Two categories of patients were considered in this work up:

1. Patients who were diagnosed to be suffering from atticoantral type of chronic suppurative otitis media on the basis of clinical evaluation and investigations.
2. Patients who apparently seemed to be suffering from tubotympanic pathology, but they failed to respond to effective medical treatment as well as removal of focus of infection from nasopharynx and sinonasal areas. The operative findings were made out under microscope during exploratory mastoidectomy.

Results:-

10-patients (24%) out of total number of 42, underwent just cortical mastoidectomy. In this group three patients had discharging central perforations, not responding to conservative treatment, six had posterosuperior marginal perforation while one was having persistent mastoiditis. 6-

patients (14%) underwent modified radical mastoidectomy. Two of these patients had attic cholesteatoma while the other four suffering from attic granulations. 26-were patients (62%) underwent radical mastoidectomy. 22-patients of this group had cholesteatoma while 4 came with following complications:

Table no 1 : Complications

Meningitis	one
Left temporal lobe abscess	one
Labyrinthitis with dead ear	two

Discussion:-

The hallmark of attic/aural type of chronic suppurative otitis media is the finding of cholesteatoma on clinical examination. Surgery (Radical or modified radical mastoidectomy) is the only mode of treatment available for this disease. The principle is total eradication of disease and converting the potentially dangerous to relatively safe ear. The surgery of cholesteatoma had been fluctuating in the hands of eminent otologists from more radical approach of the past to the relatively conservative one of today. Earlier pioneers in the late 19th and early 20th century successfully achieved the principles of treatment by radical and modified radical mastoidectomy. With the introduction of operating microscope the era of canal up (combined approach tympanoplasty with posterior tympanotomy) emerged. The rationale behind such a procedure was to avoid an open cavity with its attendant problems of retention of debris, recurrent infection, to facilitate functional reconstruction and avoidance of conductive hearing loss.

However as the results of this canal-up procedure began to emerge, it became clear that failure to eradicate the disease was seen in 13.43-36% cases while another study revealed the recurrence of disease in 5-13% cases. Such results challenged the efficacy of this procedure in every ear with cholesteatoma, so far as the radical clearance of disease was concerned.^{3,4,5,6,7,8,9}

The canal up procedure requires an experienced surgeon and patients who would be ready to observe a strict schedule of follow up visits. In developing countries the follow up of patients is very poor due to lack of education. Also, by the time the patients report to the otologist, the disease is already quite advanced. In fact in the present series of 42 patients 26 patients came with very extensive cholesteatoma, as detected on exploratory mastoidectomy while 4, of them had complications. Two patients had end stage labyrinthitis, one came drowsy with hemiplegia having temporal lobe abscess while one patient had an attack of meningitis in the past. Contraindications for the canal up procedure have been summarised by Sheehy¹⁰. These include the only hearing ear, the presence or extension of cholesteatoma into an inaccessible area, and when the cholesteatoma has destroyed one third or more of the posterior bony wall.

Due to the high incidence of both residual and recurrent disease, there has been a shift of opinion, in

recent years, towards the canal down procedure (modified radical mastoidectomy) combined with obliteration of the cavity and tympanoplasties^{11,12}.

In our part of the world the disease is too extensive to be eradicated satisfactorily with limited exposure through posterior tympanotomy and more over it has already destroyed the ossicles to be of no use for tympanoplasty. The follow up of patients is again very poor. Probably in our set up a more radical procedure should be the choice of treatment to avert any life threatening complications. 26 patients (62%) underwent radical mastoidectomy in our set up and another six (14%) had modified radical mastoidectomy, while 10 patients (24%) ended up only in cortical mastoidectomy since the exploratory findings were not conducive to proceed further.

In summary the choice of operative procedure in an uncomplicated attic/aural disease depends on large extent on the experience of operator, the availability of good operating microscope, the size of mastoid bowl, pre-operative hearing and whether the patient can be followed up satisfactorily after wards or not. While in a complicated type of attic/aural disease the answer is a radical procedure with effective exteriorization of disease.

References:

1. McKenzie, W., and Brothwell, D (1967) Disease in the ear. In Disease in Antiquity, edited by Brothwell and A.T. Sandison, pp. 464-473. Springfield, Illinois: Charles C. Thomas.
2. Milstein, S. (1980), The history of mastoid surgery. American Journal of otology, 1, 174-178.
3. Wright, W.K. (1977) Management of otitic cholesteatoma: Archives of otolaryngology, 103, 144-147
4. Charachon, R. (1978) cholesteatoma, epidermization: choice between closed and obliteration technique clinical otolaryngology, 3, 363-367
5. Smyth, G.D.L. (1980) chronic ear disease. (I) 53; 9(ii) 140-141; (iii) 211-217, Edinburgh; Churchill Livingstone
6. Sade, J., Berco, E., Brown, M., Weinberg, J. and Avraham, S. (1981) Myringoplasty. Journal of Laryngology and otology, 95, 653-665.
7. Sheehy, J.L. and Robinson, J.V. (1982) cholesteatoma surgery at the otologic medical group: residual and recurrent disease. A report on 307 revision operations. American Journal of otology, 3, 209-215.
8. Cody, D.T.R. and McDonald, T.J. (1984) Mastoidectomy for acquired cholesteatoma; Follow up to 20 years. The Laryngoscope, 94, 1027-1030.
9. Sanna, M., Zini, C., Scandellavi, R. and Jemmi, G. (1984) Residual and recurrent cholesteatoma in closed tympanoplasty: American journal of otology, 5, 277-282.
10. Sheehy, J.L. (1983) Tympanoplasty with mastoidectomy: Present status. Clinical otolaryngology, 8, 391-403.
11. Smyth, G.D.L. and Hassard, T.H. (1981) The evolution of policies in surgical treatment of acquired cholesteatoma of tubotympanic cleft. Journal of Laryngology and otology 95, 767-773.
12. Parisier, S.C., Green, R.P., Chute, P.M., Calhoun, W.F. and Som, P.M. (1982) Surgical therapy of chronic mastoiditis with cholesteatoma otolaryngology. Head and neck surgery, 90, 767-772.