Malignant external otitis

By U. PRASAD (Kuala Lumpur)

To an experienced otologist, the diagnosis and management of a case of otitis externa hardly presents any particular problem. However, if the infection is due to pseudomonas and has spread to the adjacent bones leading to necrotizing osteitis or osteomyelitis in an elderly diabetic patient, it is a formidable situation. Meltzer and Keleman (1959) were the first to describe one such case, although it was Chandler (1968) who first recognized this as a clinical entity and coined the term 'malignant external otitis' to denote the serious nature of this disease, with a very high mortality rate. Meltzer and Keleman's patient died, and so did 3 out/of 4 cases treated by Wilson *et al.* (1971). Cranial nerve paralysis has been considered to be an ominous prognostic sign. Chandler (1972) reported a mortality of 50% (8/16) with facial nerve palsy and of 80% (4/5) with multiple cranial nerve involvement. Aldous and Shinn (1973) have mentioned a similar mortality figure of about 50% (10/19) with facial nerve palsy and over 80% (9/11) with paralysis of more cranial nerves.

The purpose of this paper is to present my experience with three cases of malignant external otitis with cranial nerve palsy (as given in the table below), all of whom have survived.

TABLE.

CASES OF MALIGNANT EXTERNAL OTITIS WITH CRANIAL NERVE PALSY

Case	Age/Sex	Diabetes	Cranial nerve palsy	Organism	Treatment	Result
1. THH	67/M	Yes	VII	Pseudomonas	Surgery (×2) and antibiotics	Cured
2. SM	53/M	Yes	VII, IX, X, XI, XII.	Pseudomonas	Surgery (×3) and antibiotics	Cured
3. SS	54/M	Yes	VII, IX, X, XI, XII.	No growth*	Surgery (×1) and antibiotics	Cured

* Patient already had I.V. Carbenicillin and I. M. Gentamicin before the ear swab.

Discussion

With the establishment of the triad of this disease (Chandler 1968), namely; (a) old age; (b) diabetes; and (c) pseudomonas infection, there is hardly any difficulty in diagnosing malignant external otitis. What is

https://doi.org/10.1017/S0022215100082979 Published online by Cambridge University Press

not usually considered is the necessity to arrest the progress of the disease more or less on a war footing. The involvement of cranial nerves is an indication of the spread of, so to say , this wild fire, which has been responsible for so many deaths due to this disease, as reported in the literature.

The infection of the wall of the external auditory canal, which might have resulted from minor trauma and may look very inconspicuous to start with, spreads widely in an elderly diabetic, a condition known for decreased vitality, particularly if the infecting organism is pseudomonas. The spread mainly takes place through two horizontal clefts, usually present along the anterior cartilagenous wall of the external auditory meatus and called the incisurae of Santorini. Through these or at the junction of the osseous and cartilagenous part the infection passes on to the adjacent bone leading to spreading osteitis and retrograde mastoiditis. Involvement of the stylomastoid region or the parotid gland causes the the paralysis of the VIIth nerve. The last four cranial nerves are affected when the infection spreads to the retroparotid space while the Vth and VIth are paralysed due to spread to the petrous apex. If unchecked it ultimately leads to osteomyelitis of the base of the skull, lateral sinus thrombophlebitis, meningitis and death.

The management of malignant external otitis is considered under two headings (a) surgical; (b) medical, both of which are required to be instituted in all cases. The surgical treatment varies from removal of aural granulation in early cases or radical mastoidectomy in selected cases to extensive debridement, which may have to be repeated. The first case had radical mastoidectomy and debridement, the second had in addition a second debridement while in the third cases only local removal of the granulation was done. So far as medical treatment is concerned the important factors were the control of diabetes, systemic administration of antibiotics in the form of I.M. Gentamicin and I.V. Carbenicillin, with topical application of gentamicin. Cure was achieved in all three cases. The first took 8 weeks, the third case 6 weeks while the first case took about 6 months before being considered as cured, the criteria of which were: a well-healed external auditory canal and/or mastoid cavity with absence of any sign of inflammation or granulation. The best result was obtained in the third case although at the time of first presentation at the clinic he had paralysis of the VIIth and the last four cranial nerves. It was felt to be due to previous experience with two similar cases and the immediate institution of the combination therapy consisting of:

(a) I.V. Carbenicillin 5 Gm every 4 hours.

(b) I.M. Gentamicin 3 mgn/kgm/day in 3 divided doses.

(c) Topical application of Gentamicin after extensive surgical removal of the granulations from the ear canal, and

(d) Control of diabetes.

https://doi.org/10.1017/S0022215100082979 Published online by Cambridge University Press

Malignant external otitis

Summary

Malignant external otitis with cranial nerve palsies is usually considered to be a fatal condition. The main diagnostic features and pathogenesis have been described. The need for urgent institution of combination therapy, both medical and surgical, has been stressed. This has been proved to be of great value in saving the lives of three patients seen at the University, Kuala Lumpur.

Acknowledgement

I wish to thank Miss A. M. Tan, my departmental secretary, for typing the paper.

REFERENCES

ALDOUS, E. W., and SHINN, J. B. (1973) *Laryngoscope*, **83,** 1810.
CHANDLER, J. R. (1968) *Laryngoscope*, **78,** 1257.
—— (1972) *Annals of Otology, Rhinology and Laryngology*, **81,** 648.
MELTZER, P. E. and KELEMEN, G. (1959) *Laryngoscope*, **69,** 1300.
WILSON, D. F., PULEC, J. L., and LINTHICUM, JR. F. H. (1971) *Archives of Otolaryngology*, **93,** 419.

Dept. of Otolaryngology,
Lembak Pautai,
Kuala Lumpur 22–11,
Malaysia.

https://doi.org/10.1017/S0022215100082979 Published online by Cambridge University Press

https://doi.org/10.1017/S0022215100082979 Published online by Cambridge University Press