

## CLINICAL RECORD

### THE RESULTS OF TRANSMASTOID DRAINAGE OF THE MIDDLE EAR FOR CHRONIC SUPPURATIVE OTITIS MEDIA IN CHILDREN

By F. TYRER MADGE (Liverpool)

THE results of transmastoid drainage of the middle ear in 103 cases of chronic suppurative otitis media are considered in this survey. These operations were all performed at Alder Hey Hospital, Liverpool, and the records are published by the kind permission of the Medical Superintendent, and the Aural Surgeons, Mr. McGibbon and Mr. McFarland.

The aim of this investigation is to estimate the average success of the operation, and in particular to demonstrate the relationship between the duration of the pre-operative chronic suppurative otitis media and the operative result.

The operation of transmastoid drainage is performed on children with chronic suppurative otitis media who do not respond to active conservative treatment with instillations of medicated drops and powders, irrigations with antiseptic lotions, and the applications of zinc ionization. The term "chronic suppurative otitis media" is used to indicate all cases with a history of suppurative otitis media of over six weeks' duration, and excludes all cases of acute mastoiditis.

The operation consists in removing the cortical cells of the mastoid process, and opening the mastoid antrum, to allow free drainage of the middle ear *via* the aditus through the post-auricular wound. There is no interference with the structures or walls of the middle ear. The post-operative treatment is either to irrigate the middle ear with antiseptic lotions through the post-auricular wound, or to continue the application of zinc ionization.

The criterion of success has been fixed arbitrarily as the production of a dry healed ear within three months after the operation. Any recovery after this period has been regarded as fortuitous, and not included in the successful results.

To estimate the relationship between the duration of the pre-operative chronic suppurative otitis media and the operative result, the cases have been divided into three groups; the first group comprises early cases, in which the duration of the pre-operative chronic suppurative otitis media was from the minimal period of

## F. Tyrer Madge

six weeks up to a maximum of three months. The second group is composed of intermediate cases, with a history of between three and six months pre-operative chronic suppurative otitis media. The third group includes all the late cases with a pre-operative chronic suppurative otitis media of over six months' duration. The percentage success has been calculated separately for each group, and the fate of the failures is recorded.

### GROUP 1. Early Cases (C.S.O.M. up to and including three months).

Successes	..	..	27	
Failures	..	..	26	Radicals .. .. . 4
				Not dry in three months .. 22

*Percentage Success in Group 1—51 per cent.*

### GROUP 2. Intermediate Cases (over three months and up to six months).

Successes	..	..	11	
Failures	..	..	18	Re-opened .. .. . 4
				Died .. .. . 2
				Not dry in three months .. 12

*Percentage Success in Group 2—38 per cent.*

### GROUP 3. Late Cases (over six months).

Successes	..	..	3	
Failures	..	..	18	Radicals .. .. . 4
				Re-opened .. .. . 1
				Not dry in three months .. 13

*Percentage Success in Group 3—14 per cent.*  
*Percentage Average for all Groups—40 per cent.*

These results indicate very clearly that the success of the operation depends upon the duration of the pre-existing chronic suppurative otitis media, and that the best results are obtained by early operation.

The early cases show a very good percentage of success, but many cases of suppurative otitis media of similar duration often recover spontaneously without any operative treatment, so that this would not appear to be a very favourable argument for operation in the first three months.

Cases of chronic suppurative otitis media of from three months' to six months' duration that do not recover with active conservative treatment administered during that period, seldom achieve subsequent recovery without operation, and radical mastoidectomy is usually considered in these cases. It has been established that the acuity of hearing in adults is progressively impaired by chronic

## Clinical Record

suppurative otitis media, and it has been confirmed in the Audiometric Clinic at Alder Hey Hospital that this observation holds equally true for children. Therefore if the degree of deafness is already considerable there can be no contra-indication to the performance of a radical mastoidectomy; but if the child still retains a fair degree of function, with a loss of not more than 35 decibels the operation of transmastoid drainage would seem preferable, not only to alleviate the symptoms, but also to arrest the insidious progress of impaired hearing. This value of 35 decibels loss corresponds with the limit of deafness for Educational Grade 1 laid down in the recent report on Children with Defective Hearing, published by the Board of Education, which defines this Grade as those children with defective hearing who can, nevertheless, without special arrangements of any kind, obtain proper benefit from the education provided in an ordinary school—elementary, secondary or technical. The results of the intermediate group of this series demonstrate that there is a reasonable chance of success for these cases.

The late group indicates the futility of the operation in cases with a history of over six months' duration of chronic suppurative otitis media, and that the choice lies between a potentially dangerous intermittent or constant suppurative otitis media, with increasing deafness, or the performance of a radical mastoidectomy.

The failures have suffered diverse fates: one case died of lateral sinus thrombosis, some required further operative measures, a few recovered spontaneously outside the time limit of the operation, and the majority of the remainder, having either refused further operation, or neglecting to attend for regular treatment, still possess intermittent otorrhoea.

The conclusion drawn from these results is that unless the opportunity for natural recovery is to be denied in the first two or three months of the suppurative otitis media, the optimum results of transmastoid drainage are obtained by operation as early as possible after this period, and imperatively before the disease has been allowed to continue for a duration of six months.