Societies' proceedings

ROYAL SOCIETY OF MEDICINE—SECTION OF OTOLOGY

21 June 1968

CHARLES SMITH (York) said that there is no doubt that a successful closed tympanoplasty has a strong emotional appeal to the surgeon. It is difficult not to be impressed by an operation that allows you to take an ear with an active attic infection and so-called cholesteatoma which is discharging offensive pus and in a matter of a week or two convert it to an ear that many registrars and some consultants would not be able to tell from a normal one.

My interest in this operation stemmed from a desire to avoid unnecessary removal of healthy tissues, such as meatal skin and ossicles, in operations for chronic otitis media and the description given to the different procedures in the patient's notes outlines the history of my efforts to achieve this. At one time the term extended cortical mastoidectomy was used, later Daggett operation, then Smith's operation (which was essentially that used by William House in the late 1950s, although I was not aware of this) and finally combined approach tympanoplasty. It is significant and indicative of the initial success of these methods that, whereas in 1960 only two of some thirty-five mastoid operations done for chronic infection were of this type, in 1968 twenty-two of thirty-four operations were by the combined approach technique. To date only one case has had to be re-opened and converted into the more traditional modified radical.

There seems little doubt that preserving the bony meatus increases the possibility of obtaining a good functional result after mastoid surgery. Repair of the perforation with temporal fascia and the closure of the middle ear and mastoid cavity from the external meatus appears to encourage healing by first intention and the production of a dry ear. The anxiety is that the ear may not be safe. It is certainly safer than the permeatal operation which Cawthorne and Pickard reported to the Section about 2 years ago, as the limited surgical field that is offered by this route means that disease must be left behind in some cases. It is also safer for the patient than leaving an apparently innocuous attic defect unexplored, which many of us have done in the past. Too often extensive disease is later found in these cases and the knowledge that with combined approach surgery one is not going to leave the patient any worse off, allows one to explore them early. Personally I feel that a combined approach operation produces an ear that is safer than one in which full thickness skin grafts, muscle, bone and other materials are used to obliterate and to cover potential areas of infection in the temporal bone.

Dr. Sheehy has said that to pursue this type of surgery one requires motivation. As you will see, I have that. In fact, I can say that I also have lift-off. However, I still feel that it is possible that we are discussing the oto-

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logical heresy of the age. On the one hand as a result of these operations there are a number of patients who have ears that are dry and functional when with previous techniques this would not have been so. On the other hand there is a possibility that a few patients are left with ears that are not as safe as they would be after more traditional surgery and who may later die from avoidable intracranial sepsis. Does the unnecessary death of one patient cancel the benefits enjoyed by the majority?

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Discussion on the intact canal wall technique in operative treatment of chronic suppurative otitis media

IAN B. THORBURN (Blackpool) said that he had been interested in combined approach tympanoplasty for several years but had found it applicable in only seventeen cases, three of which have since been revised. A number of other cases were started as possible combined approach tympanoplasties but were converted to radical or modified radical procedures because access was too restricted for the dissection of disease. This applied especially where the stapes was fixed by hyaline tissue in the oval window niche and with extensive cholesteatoma. Dissection of the facial recess certainly provides a useful approach to limited disease in the sinus tympani region and a nice channel for the subsequent ventilation of the mastoid cavity.

The adoption of an intact canal wall technique commits the surgeon to some new concepts in the management of chronic otitis media:

(1) A large cortical mastoid cavity is created which must drain in the immediate post-operative period, acquire a healthy mucous membrane lining and be ventilated from the eustachian tube through the tympanum.

(2) A large tympanic cavity is created since the tympanic membrane is rebuilt by fascia supported on the outer attic wall and annulus.

(3) Since the ossicular chain seldom survives, the surgeon must be prepared to repair ossicular defects either immediately or at a later date. This may involve the use of homograph ossicles or cartilage.

(4) It may be necessary to sacrifice healing responses in type 2, 3 or 4 manner within the tympanum possibly associated with good hearing.

(5) A type 5 tympanoplasty is not possible if the canal wall is retained. This is regrettable since, in advanced conductive deafness due to stapes fixation by tympanosclerosis, the most satisfactory way to restore hearing may be a type 5 tympanoplasty. This means a two stage operation:

The first stage involves building a closed tympanic cavity with access to the mastoid; the second stage, when the cavity has healed, is the creation of a fenestra in the lateral semicircular canal.

Some of the problems involved in the use of an intact canal wall technique for the management of cholesteatoma and tympanosclerosis were illustrated by colour photographs. Two examples of residual cholesteatoma were shown; in one of these a second stage operation was carried out with a view to the

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repair of the ossicular chain under the impression that the ear was securely healed.

From the functional viewpoint in particular this technique is attractive. However, in the management of cholesteatoma the possible incidence of hidden residual disease is such that it would generally appear desirable to operate in two stages, especially when any ambitious ossicular reconstruction is contemplated.

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Blackpool.

Discussion on operative treatment of otitis media

P. H. BEALES (Doncaster) said that this new technique of combined approach tympanoplasty is one of great interest but one is concerned about the detection of recurrence of cholesteatoma. If recurrence is in the tympanum there is no difficulty in detecting it as it can be seen, but if it appears in the mastoid segment it cannot be detected usually unless a complication develops, such as infection, a labyrinthine fistula or an intracranial complication. I think it is very important to restrict this type of surgery to those patients who are intelligent enough to appreciate the possible dangers in the long term and who agree to attend for regular follow-up examination. Even then it is difficult to know if one should advise re-opening of the mastoid segment at intervals or just wait until one thinks a complication is developing.

One of the disadvantages of this new technique as compared with the older methods of an exteriorized cavity is that the patient has a dry ear and does not have to attend at intervals for removal of debris and the treatment of occasional infection of the cavity. The patient may thus have a false sense of security.

I am of the opinion that this method should not be done in a country which does not have a sophisticated type of medical service with an adequate number of specialists who can be reached easily. It is not as safe a method of dealing with cholesteatoma as the older methods and this must be clearly appreciated.

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Doncaster.

MR. HAROLD ZALIN (Liverpool) said that both speakers made the highly significant point that where gross pathology is encountered, the operation is performed in two stages. The primary procedure eradicates disease whilst respecting the total integrity of the posterior canal wall. A secondary tympanoplasty follows when, and presumably only if, the ear becomes dry and stable.

He would urge that, as far as this country is concerned, where such very lengthy otological procedures are somewhat impractical, a virtue be made of necessity by applying the two-stage technique routinely in all cases. Ossicular tissue may be removed at the first operation and preserved for reintroduction during the second stage tympanoplastic reconstruction. Failure of stage one is a contraindication to stage two and demands an exteriorized cavity.

His own experience over the past 3 years confirms initial impressions received during a visit to Dr. Klaus Jansen's clinic at Gummersbach. Jansen's major contribution is the demonstration that extensive chronic tympano-

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mastoid disease can be removed without the infliction of an exteriorized cavity. As far as improvement in hearing is concerned, despite theoretical advantages of a strictly preserved canal wall, results are variable and unpredictable, primarily because of the 'bad' eustachian tube. The latter remains insoluble.

We must remember the lessons of Wullstein tympanoplasty and beware the dangers of over optimistic claims of hearing improvement which, if unconfirmed in the long term, might discredit this manifest major advance in aural surgery.

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Liverpool, 1.

I. M. SCHNEE (United States) said he was grateful for the opportunity to attend the meeting and enjoyed the presentation as well as the interesting and enlightening discussions.

The intact canal wall operation is a valuable contribution and may be included in the armamentarium of the otologic surgeon to good advantage.

The technique is a luxury item and can be afforded only by the expert temporal bone surgeon. It implies more meticulous eradication of disease and judgement with respect to the feasibility of using it in a particular case.

To extend the range of its application, he developed a modification consisting of sectioning the bony posterior canal wall by a superior and inferior osteotomy in line with the external canal. The bone remains attached to the skin and is mobilized forward to expose the posterior tympanic cavity. This osteoplastic flap is replaced in its normal position at the end of the operation. The operation provides a means for more adequate exposure of otherwise inaccessible areas, thus making it possible to apply the intact canal wall preservation to more cases.

Dr. Schnee illustrated his technique with a series of coloured sketches.

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Discussion on combined approach mastoid operation

J. SIEGLER (Liverpool) said that the combined approach mastoid operation has been used for twenty-two patients attending his clinic in Liverpool with chronic suppurative otitis media.

Otologists have performed radical mastoid operations or atticotomies for generations but many patients have been disappointed because their ears have continued to discharge. Loss of time from work, travelling to and from hospital for ear dressing, imposes a serious financial burden on a working man. Many cease attending for treatment and consequently, the ears continue to discharge. Efforts to ensure healing, by skin grafting the cavity or obliterating it, have not always succeeded.

A mastoid cavity continues to discharge because disease has been left in the recesses of the mastoid process or in the middle ear. The healed cavity may become infected after operation by repeated dressings in the out-patient's department.

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Retention of blood clot, wax, or even bath water within the mastoid cavity behind a high facial ridge or retained by a small opening also leads to persistent infection. Infection along the eustachian tube, during a cold, may infect the middle-ear segment.

The combined approach mastoid operation has several advantages. It ensures meticulous removal of disease, many patients gained useful hearing following reconstruction of the ossicular chain and drum. Much less time was spent attending hospital after operation, and the patient did not suffer the pain whilst having a mastoid cavity cleaned.

The operation, however, took much longer to complete, often 3 to 4 hours. It was often difficult to preserve the roof of the bony canal, especially when the dura lay low. Access to the facial recess was obstructed by the long process of the incus. The incus had to be removed temporarily to gain access to facial recess. In some patients after a long operation with complete removal of disease the stapes was found to be partially destroyed and reconstruction therefore impossible.

Our short term results of patients operated on during the last year are eighteen patients of the twenty-two operated on have dry ears with no cavities, four of these enjoy good hearing following successful reconstruction of the ossicular chain.

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Discussion on intact canal wall mastoidectomy

ANDREW W. MORRISON (London) said that it has been suggested today that the complications of chronic aural suppuration may arise months or years after an intact canal wall mastoidectomy due to recurrent or residual disease, whereas following more conventional radical or modified radical surgery this is not possible. It should be remembered that no chronic ear is entirely 'safe' and that complications can be encountered even after multiple mastoid operations. Intact canal wall techniques demand meticulous disease removal, and the incidence of residual disease is probably lower than following conventional surgery.

Doubts have been cast on the functional results of this surgery. Both opening speakers seem to favour two-stage procedures. I have encountered many difficulties with second stage operations and for this reason, provided the stapes is normal or its footplate mobile, attempt a one stage reconstruction even in the presence of active suppuration. The results are not brilliant but more than half the patients have closure of the air-bone gap, and second stage operations can still be considered in the remainder.

A final question for Dr. Sheehy and Mr. Hammond—when this surgery is performed for cholesteatoma in childhood or adolescence, should the mastoid be re-explored to exclude residual disease and, if so, at what stage?

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