SOCIETIES' PROCEEDINGS

ROYAL SOCIETY OF MEDICINE—SECTION OF OTOLOGY

December 7th, 1962

Discussion on Pre-epidermosis

MR. DIXON asked Mr. Zalin if, among the children he has been following with retracted drums and exudative otitis media, he had as yet seen any case develop a cholesteatoma.

MR. BROWN-KELLY asked Mr. Zalin if he could give any practical advice on acquiring a patent Eustachian tube. Removal of adenoids, treatment of sinusitis or allergy was often not enough to obtain tubal patency in these children. Another important factor is the re-infection of the patients by other members of his family. It is useless to treat the child if the mother has sinusitis, the father a streptococcal throat or the brother a chronic otorrhœa. These must be dealt with also.

MR. ZALIN said: In reply to Mr. Dixon I would repeat that at no time in any of these cases did we find active chronic suppuration. We attribute this, on the one hand, to the constant supervision and treatment given, and on the other to the comparatively limited period in which these cases have been under observation.

Mr. Brown-Kelly suggests that repeated reinfection of these children occurs in their home environment, as shown by the almost invariable recurrence of symptoms shortly after discharge from hospital. In the great majority of cases, these are not however, examples of reinfection, but are due to exacerbation and relapse of inadequately resolved pathology. He also suggests that the source of the reinfection is to be sought in other members of the household, particularly the parents. Where reinfection does in fact occur, it has been shown by the Paddington Survey that the child of school age is in fact infected in school and carries infection into the household, the parents being more liable to infection from the child rather than the reverse.

Mr. Thorburn is not convinced that cases of Exudative Otitis Media do show the collapse which I describe. It is very likely that this is an example of wood being obscured by the trees, and I must admit that in our early studies of this exudate, we were not struck by the collapse. It was only later when we reviewed the cases as a long term survey that the sequelae became evident. The time factor is therefore quite important. It may well be that when Mr. Thorburn sees his cases at a later date that the collapse pathology will become more evident.

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Royal Society of Medicine

Discussion on Facial Palsy

MR. JOHN GROVES said: Having studied the implications of Dr. Campbell's work on the prognosis of facial palsy I have adopted routine daily tests of nerve excitability in all early cases of facial palsy in the E.N.T. department at the Royal Free Hospital. So far we have followed through 24 cases, and have found the method reliable in everyday clinical work. In 20 cases a good prognosis was given and eventually fulfilled, without treatment. In the remainder degeneration of many or all of the fibres occurred, and immediate decompression of the nerve was considered for these, on the same day on which nerve excitability was first lost. Operation was not possible in three of these patients, and their eventual recovery has been poor. In the fourth case, operation was carried out on the 21st day. A grossly swollen nerve trunk was released from its surroundings. Immediate recovery of neurapraxic fibres occurred, and good reinnervation is now proceeding in the areas of the face where degeneration of the motor nerve supply had already taken place.

If decompression has a place in the management of Bell's palsy, I feel sure that it will have to be done at a very much earlier time than has previously been usual. I believe that Dr. Campbell's work goes a long way towards solving the problem of identifying the small minority of cases who need active help, at a time when treatment has a prospect of doing good. We are now able to test the value of really early decompression in these cases, secure in the knowledge that as a group these are the few who without treatment are very likely to do badly.

MR. MCKENZIE said that this report of early diagnosis by electrical methods in facial paralysis was most encouraging, but that the clinical examination had not lost importance. A patient would often report a change in sensation in the face, for example, before recovery of movement. Recently he had a patient sitting in his clinic, who had just recovered muscular movement in all divisions of the facial nerve, yet who had a report of the electrical reactions which was only a few days old and which recommended immediate surgical exploration because of the signs of nerve degeneration.

In considering decompression for Bell's palsy, it should be remembered that most patients were quite satisfied if partial movement returned, and that complete and permanent facial paralysis in Bell's palsy was a rarity whatever treatment was recommended.

Lastly, he had recently had the experience of seeing the facial movement recover in Bell's palsy a few minutes after a stellate ganglion block, and this one case was enough to make one forget earlier disappointment from this method.

Discussion on Electrodermal Audiology

MR. D. W. BAWTREE, said: I have had the opportunity of having a demonstration of Electrodermal Audiology by Professor Maspétiol in Paris 4 or 5 years ago and I feel that this type of test should be more widely used in this country.

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Societies' Proceedings

Discussion on Acoustic Trauma

D. W. BAWTREE said: I would like to suggest how very important it is for us to impress on all those working in Industrial Noise the absolute necessity of ear protection.

From experience when carrying out Tests of Blast Cures for High Angle guns in Destroyers towards the end of the war, I have found the same problem—the difficulty of enforcing personal ear protection, except by an actual executive order—this difficulty stemming from the tradition of the older Naval Officer, that he was "tough enough" to stand up to heavy gunfire without protection.

In visiting Experimental Gas Turbine Stations the same tradition was found.

I think also that Low Frequency Noise around 90–110 db. can cause as much trauma as High Frequency, but both affect only the High Tones of Hearing.

Surg.-Lieut. Cdr. R. R. A. COLES, R.N., said that the influence of conductive deafness on noise susceptibility was an important subject at the present, when many authorities were actively engaged in planning hearing conservation programmes. More often such hearing loss is supposed to afford a measure of protection against noise; Mr. Chadwick's evidence that the opposite may sometimes occur is therefore of particular interest. However, consideration of it raised a few questions of detail.

First, what was the number of ears with middle-ear lesions which were exposed to the louder noise, and what proportion of them developed changes of hearing greater than the group average of the more otologically normal subjects?

Second, in the ears with middle-ear lesions, were the changes of hearing entirely perceptive in type, or could at least part of them be attributed to alterations in the size of the conductive element of their hearing losses? In short, were the bone-conduction thresholds changed as much as the air conduction ones?

In response to the question raised in discussion as to the possible occurrence of noise-induced hearing loss at low frequencies, some information is available from another source. Intense jet engine noise is experienced by the flight-deck personnel of aircraft carriers and, in two recent audiometric surveys, Coles and Knight (1959)* have found the average effect of such exposure to be a wide but relatively shallow dip centred on 1 kc./s. Because the effect is in the centre of the speech frequency range, losses smaller than those at or around 4 kc./s. following acoustic trauma assume greater importance in terms of practical disability. With refernce to Mr. Chadwick's paper concerning another type of jet noise, it was interesting to note that apart from changes of hearing at high frequencies there seemed to be a secondary effect in the lower frequencies, also centred on 1 kc./s. It is probable that this is a characteristic result of exposure to broad-band noise of jet type, though another factor may be the selective effect of ear protection in filtering out more of the high frequency components of the noise than of the low.

Wing/Cdr. P. F. KING said: I would like to raise a few points connected with Mr. Chadwick's paper on Acoustic Trauma.

* COLES, R. R. A., and KNIGHT, J. J. (1959) *Nature* (*Lond.*), **184**, 1083.

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I think he is right to emphasize the shift from calling noise induced deafness "Acoustic Trauma", by describing it as occupational deafness. As our American colleagues have described, occupational deafness may be the result of noise induced hearing loss produced by a steady state noise, and also by sudden peaks of high intensity noise, sometimes of an explosive nature, which produce true acoustic trauma. Depending on the noise hazard, it is likely that lesions from both causes may exist in the same ear.

It is, I think, pertinent to describe the condition generally as occupational deafness, because this fixes the condition once and for all as a working hazard. Some degree of the risk to which men are exposed may be indicated by a recent survey of deafness in the Royal Air Force. We examined histories of men who were referred to otological clinics with the complaint of deafness during 1 year immediately before the full introduction of ear protection. An analysis of the the resulting figures showed that occupational hearing loss was the greatest single cause of deafness and constituted more than 35 per cent. of all cases of deafness in men who were reporting with this symptom. Turning to those with perceptive loss alone, from which cases of Ménière's disease were excluded, occupational deafness constituted 63 per cent of all cases of perceptive hearing loss.

It should be emphasized that these figures only relate to men who reported sick with deafness or tinnitus. It does not take into account those in which this condition was found at routine Medical Boards, nor those men who were suffering from the complaint but did not report sick—only a full-scale hearing survey would detect these, and one could confidently predict that the proportion of those with this condition would apparently rise appreciably.

There are three potential tragedies with this condition:

1. It is preventable and prevention is so often overlooked.
2. The persons one wishes to protect are often their own worst enemies, by failing to use protective equipment provided for them.
3. During the prime of life, while by audiometry there may be an appreciable loss at 3,000 c./s. and above, the amount of disability may not be great, and disability may only be experienced when the changes of presbyacusis are imposed on an already damaged ear. One is then faced with an elderly man with marked perceptive deafness and often aggravating tinnitus—and both these conditions can be extremely difficult to alleviate effectively.

Mr. J. D. K. Dawes, said: There appear to be two major problems. Firstly, the general protection of all workers against noise and secondly the protection of the very susceptible individual to noise trauma. Is it not possible by some test to pick out the susceptible individuals and so avoid employing them?

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