SOCIETIES' PROCEEDINGS

ROYAL SOCIETY OF MEDICINE—SECTION OF LARYNGOLOGY

May, 1937

President—MR. LIONEL COLLEDGE, F.R.C.S.

Discussion on Injuries of the Frontal and Ethmoidal Sinuses with Special Reference to Cerebrospinal Rhinorrhœa and Aeroceles

The opening paper read by MR. HUGH CAIRNS is published in this issue of the *Journal of Laryngology and Otology*, Vol. LII, No. 9, pp. 589-623.

DISCUSSION

MR. W. M. MOLLISON: Rhinologists have always recognized the dangers of damage to the floor of the anterior fossa of the skull; they have been reminded of it by various untoward happenings from time to time, notably by fatal meningitis following intranasal operations on the ethmoid and occasionally after the operation for submucous resection of the septum.

The early operations on the frontal sinus and ethmoid from outside were much discredited in the eyes of many, owing to the fatal sequælae of osteomyelitis and meningitis.

It is probable that lack of exact anatomical knowledge increased the liability to meningitis through damage to the dura mater near the cribriform plate and, of course, to the very variable anatomical formation of the ethmoid cells.

Actually, in my experience, damage during intranasal operations is far more deadly than that at external, and I feel that this is the common experience.

My contribution to this discussion is to record four cases in which damage to the dura with escape of cerebrospinal fluid occurred during external operations, but with recovery in all. Small as this number is, it does suggest that damage of the dura of the anterior fossa, when recognized at operation, is not the fatal accident it was formerly considered.

CASE I.—Male, aged 56. During external operation for fronto-ethmoid suppuration the dura was damaged very near the cribriform

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plate, and fluid was seen to escape from a minute tear. Pure carbolic acid applied; uneventful recovery.

CASE II.—Female, aged 17, suffered from frontal sinus suppuration with symptoms of meningitis for two days; pus found in the sinus and a thickened œdematous lining; after removal of the lining a horizontal line was noticed in the posterior wall.

CASE III.—Female, aged 38, with growth of the ethmoid extending to base of skull. External operation: growth found invading the dura of anterior fossa. During removal the dura mater was damaged and cerebrospinal fluid escaped. Pure carbolic acid applied. Recovery without incident.

CASE IV.—Officer, aged 35, who had sustained a war wound —small pieces of shrapnell found by X-rays in the frontal sinus. On account of symptoms removal was undertaken. External operation. Shrapnell found in the posterior wall of the frontal sinus and removed. Dura mater damaged with escape of cerebrospinal fluid. Pure carbolic acid applied. Recovery without incident.

PATRICK WATSON-WILLIAMS said that cases of this kind were not only extremely interesting, but also very unusual, hence it could fall to the lot of few to have such experience as Mr. Cairns had, or such success.

Owing to the rarity of these cases he might be permitted to refer again to two cases which he reported to the International Congress of 1913, and which were illustrated in the *Journal of Laryngology* (Vol. xxviii, No. 12, December, 1913) and also in the "Proceedings" of the Society. They showed how important it was to bear in mind the possibility of cerebrospinal rhinorrhœa if one was to avoid the pitfalls attendant on operative interference in these chronic cases.

The first of the cases was that of a man aged 42, who had a condition similar to frontal mucocele. The right eye was protruded, and displaced, and on examination the case seemed to be simply one of nasal obstruction from an extensive polypoid formation, with recurrent headaches. There seemed to be every indication for proceeding to relieve the condition. He had no idea that it might be cerebrospinal rhinorrhœa, which eventually it proved to be. He removed the polypi, and opened the frontal sinus and the ethmoidal cells for drainage, but was astonished when, shortly afterwards, the patient developed symptoms of meningitis. The *post mortem* examination revealed a dehiscence in the bony roof of the frontal sinus and, at one point, a pin-hole aperture in the dura, as shown in the illustrations in the original report. Not till then was it found that the previous history indicated that since the patient was 16 years of age he had had this periodical escape of clear fluid from the nose.

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He felt that, in cases such as the foregoing, if one was not practically forced to operate, the safest course would be to leave them alone. It was not a case of traumatism, and what was learned only after operating revealed that for twenty-six years he had had recurrent cerebrospinal rhinorrhœa, and nothing had happened, from the dural point of view, until operation was carried out and infection resulted.

SIR STCLAIR THOMSON: I had the chance to differentiate cerebrospinal rhinorrhœa thirty-eight years ago.* I then made investigations into the history of cases of the traumatic kind: they are not uncommon, with discharge of fluid from the ear or nose after accidents. It is usually temporary, and it may be recovered from if the nose is left strictly alone, and nothing more done for ear cases than necessary disinfection with carbolic lotion.

Coming to the "spontaneous cases", we must differentiate between the pure spontaneous case and the case associated with conditions like meningocele. These are not strictly spontaneous. The spontaneous cases cannot be traced to any congenital defect because most of them occur in adults; they generally develop without any history of accident or of any predisposing disease, and the X-rays give no help in such cases. These spontaneous cases, in the absence of gross defect, probably occur along the sheaths of the olfactory nerves. Spontaneous cases are few and far between and some turn out not to be spontaneous. In one of my cases, before the days of X-rays, I followed up the development of the condition until the patient died; then I went down to the East End of London and, with difficulty, got permission for an autopsy. We found, to our surprise, the leakage was due to syphilitic necrosis in the anterior fossa of the skull. Such a case cannot be called true spontaneous cerebrospinal rhinorrhœa. But the true spontaneous cases fluctuate; sometimes the flow will cease; the patient may then have a headache, and that persists until the flow restarts, usually to the patient's great relief. Others cease spontaneously, temporarily or permanently, without fresh symptoms. That is one reason why these people are opposed to active interference. Active interference by the nasal surgeon in these cases is always extremely dangerous, in fact many patients are lucky to have escaped with their lives before their case was correctly diagnosed.

At the beginning of this year Mr. Peacock brought me a case in which the lady had had all the sinuses on one side except the frontal sinus operated upon, for no other reason than that there was a dripping from her nose. He found no pus, but the fluid dripped steadily, and he made the correct diagnosis. In consultation with

* *The Cerebrospinal Fluid: Its Spontaneous Escape from the Nose.* StClair Thomson. London: Cassell & Co. 1899.

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him I offered the suggestion that had been made in other cases, namely, to give complete rest in bed with a series of lumbar punctures. That advice was carried out. But as soon as she got up again, the nose-dripping returned. The operation Mr. Cairns has described was proposed to her, but she declined it.

In regard to the cases which recover spontaneously, I suggest we do try and follow them up and keep records of them. I have heard of a few and have traced them for years and then they have been lost sight of. Two years ago last January I was asked to see the wife of a colleague in Colombo, who had cerebrospinal rhinorrhœa. I recommended non-interference, and I had a letter six months afterwards saying she was well and the dripping had ceased; and when I next heard, eighteen months later, she was still well.

I think the chief thing is to take care not to overlook a case. In that respect I suggest the importance of getting the fluid tested while fresh. In my early days of practice I used to take the fluid to King's College the next day, and the analysis was negative. I could hardly believe this, but one day, a patient coming to see me early, I took the fluid the same afternoon for examination, and it was positive to the tests for cerebrospinal fluid. That is because the glucose quickly undergoes changes, and if the fluid is not examined during the first six hours or so, it may fail to give the necessary reaction.

When the condition has been diagnosed I can only repeat the danger of intranasal treatment, and the improbability of being able to do any helpful operation in the neighbourhood of the cribriform plate.

But, in view of what Mr. Cairns has said, and appreciating the great difference between risk of infection by the nose and the rarity of its occurring in cranial operation, I feel we are justified in recommending external surgery for such a case. The proportion of the cases who die is greater than that of the recoveries, and as long as a person is leaking cerebrospinal fluid from the nose he remains in the danger zone.

Professor FRANCESCO LASAGNA (Parma) said that when the President wrote stating that the Section would be discussing the subject of cerebrospinal rhinorrhœa, he was himself seeing a patient with the condition, but he did not study it, as he left Italy in order to be present at this meeting.

He exhibited a radiogram of the case, that of a man 55 years of age, in apparently good general health. Examination of the nose revealed nothing, nor did investigation of the various systems of the body. The radiogram now shown would explain the normal condition of the sinuses on the right side, and only a slight modification of the hypophysis and the sella turcica. When the

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patient turned his head to the right and downwards, a large quantity of liquid flowed from the nose spontaneously. It was difficult to arrive at a conclusion about the case at that stage, it would be necessary to continue the investigation in order to detect the reason of the rhinorrhœa: but I am of the same opinion as Sir St Clair Thomson that in all cases of rhinorrhœa it is necessary to study all parts of the sinuses and the skull for more apparent rhinorrhœa without a lesion.

THE SCOTTISH OTOLOGICAL AND LARYNGOLOGICAL SOCIETY

(The Forty-fourth Meeting of the Society was held in the Ear, Nose and Throat Department of the Royal Infirmary, Edinburgh)

November 14th, 1936

President—Dr. Gavin Young

I.—Discussion on the Operation of Attico-Antrotomy

A. BROWNLIE SMITH (Edinburgh)

In opening this discussion on the operation of attico-antrotomy, I think it is wise to define exactly what is meant by this term. It would simplify our ideas of the surgery of the temporal bone if we classified mastoid operations into four groups:

(1) The Schwartze or Conservative Mastoid, in which the tympanic antrum and mastoid cells are opened but the bony meatus and the membranous meatus are left intact.

(2) The Modified Radical Mastoid, in which the antrum and mastoid cells, if any, are opened but a part of the bony meatal wall is removed and a flap is cut from the membranous meatus. The bridge in this operation is left intact.

(3) The Attico-Antrotomy, a further stage of the modified radical in which the bridge is removed along with the outer wall of the attic but the ossicles and the contents of the tympanum are left intact.

(4) The Radical Mastoid, in which the contents of the tympanum are removed.

In some cases the incus is removed in performing the operation of attico-antrotomy but the essential difference between this operation and the radical mastoid is that in the former, as far as possible, the contents of the tympanum and especially the windows are not disturbed.

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