INSOMNIA AS AN EARLY SIGN OF BRAIN ABSCESS.

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MOST otogenic brain abscesses arise from local contact and usually pursue a peri-vascular route.

The case history recorded here is of interest because of (i) the gradual development of a very large temporo-sphenoidal abscess after a radical mastoid operation (the origin of the abscess was most likely an unsuspected latent subdural infection); (ii) the development of insomnia of several days' duration shortly after operation; (iii) the later evolution of all the classical symptoms and signs of intracranial abscess.

Insomnia as a feature of "early" intracranial complication is perhaps little known or realised. Kerrison emphasises this point in stating: "It seems a paradoxical statement that both somnolence and insomnia are strongly characteristic features of this disease. The patient may be practically sleepless during most of the 24 hours, or, as is more often the case, his sleep is exceedingly fitful, disturbed, and easily broken, so that he sleeps and wakes many times within the hour, and in the morning is unrefreshed." (*Diseases of the Ear*, J. B. Lippincott Co., 1923.)

An earlier patient under the writer's observation some years ago, who died from what proved to be the rupture of a temporo-sphenoidal abscess into ventricles and subarachnoid space, had described his insomnia somewhat as follows: "Though I am no longer able to work, I get very sleepy, so that I can hardly keep my eyes open; when I lie down I cannot sleep."

History of Present Case.

Mr. O'N. presented a purulent discharge from the left ear since childhood. As a child he had had scarlet fever, and it is probable that the otitis media was a sequel to this infection.

Examination of the ear showed absence of the greater part of the tympanic membrane and the lower part of the malleus. Numerous small polypi were clustered around the upper part of the malleus. A fœtid discharge was present in the depths of the middle ear. For all practical purposes hearing was negligible. A radical mastoid operation was advised.

Left radical operation was performed on July 7th, 1943. The mastoid was of the sclerotic type. Pus and granulations were present in the aditus ad antrum. Owing to the small size of the operation cavity, a simple plastic was done.

Progress: During the four days following the operation his chart remained normal. He complained, however, of lack of sleep; the nurses reported that his sleep was fairly good. He received the usual sedatives, which were increased owing to his constant complaint of sleeplessness.

Patient first complained of headache on the 4th post-operative day. Asked where the headache was, he would place his hand over the left frontal bone and pass it backward towards the temporal region. Replies to questions were only partially answered, i.e., he was already partially aphasic.

On the 8th post-operative day he complained of severe headache and dizziness. Both headache and dizziness persisted for the next 5 days.

Up to this period the temperature had kept an even course of 98·2° F. with an average pulse rate of 76. On the 13th day the temperature rose to 99·6° F. and the morning pulse rate was 66, rising that evening to 72. Lumbar puncture was unsuccessful and was not repeated.

From the 14th to 19th days, he did not complain of severe headache, but felt very drowsy and complained of dizziness when sitting up in bed. The temperature became subnormal, and the pulse averaged, morning 70, evening 72.

On the 19th day the patient was allowed up for about twenty minutes, but it was now noticed that he looked badly and his colour was not good; the morning pulse on the 4-hourly chart showed a marked slowing of the rate, the lowest reading being 58, morning; the lowest in the evening was 50.

Between the 13th and 25th post-operative days he had vomited once or twice each day. He did not complain of much pain at this time, but was very drowsy and became very dizzy on sitting up. On the evening of the 25th day he became unconscious.

That evening, assisted by Dr. Oliver Fitzgerald, I reopened the mastoid incision, at the same time extending it upwards. I exposed the dura of the middle fossa to an area corresponding in size to that of a five-shilling piece. The dura was discoloured and felt tense. I inserted a large-bore needle attached to a 20 c.c. Record syringe. Pus, rather dark in colour, filled the syringe. On emptying the syringe another half syringeful was obtained. The pus had a very offensive odour. Through a small incision in the dura I inserted a rubber drain.

Dr. McGrath's report on the subdural fluid read: "This specimen was a pustular yellow evil-smelling viscid fluid. Direct films show cellular debris and relatively few complete pus cells. Numerous small Gram-negative bacilli were present, and a few Gram-positive cocci. Tubercle bacilli could not be found."

"Cultures were prepared on serum and broth agar. They both show a fairly profuse pure growth of small Gram-negative bacilli."

During that evening (that of operation) the patient regained consciousness. His pupils were unequal, the left being dilated.

Next day the patient was better. Both pupils were equal. He was given sulphadiazine, two tablets four-hourly. During the ensuing two nights restlessness was observed.

Eight days after the drainage of the intradural abscess double vision was noticed in the right eye. This sign persisted for a long period afterwards. The patient still had slight aphasia.

Dr. McArevey examined the patient (Aug. 11th, 1943) and found papillœdema of high degree in the left eye and to a slightly lesser extent in the right.

On Aug. 13th—the twelfth day since drainage—a rigor was observed in the morning. The patient became rather drowsy in the afternoon, and his pulse slower. Next day, he vomited twice between 4 and 5 p.m., and complained of severe pain in both eyes. That night he had severe headache.

Two days later, in the morning, he complained of numbness in the right arm and leg, and about 10 a.m. relapsed into deep coma with stertorous breathing.

Operation was carried out three hours later.

A curved incision was made over the left temporo-parietal region.

A large area of bone—approximately the size of one's palm—was removed. His dura, which was bulging and yellowish, was incised horizontally for some three inches. It was noticed immediately that the pia-arachnoid commenced to "mushroom" through. On passing a closed forceps down to a distance of one and a half inches, thick pus under pressure gushed out (8 ozs. approximately). Plain sterile gauze was lightly packed into the cavity, and with the exception of a loose lateral stitch in the scalp, the wound was left practically open.

The patient regained consciousness that afternoon. His mentality cleared and remained so. Next day he had regained the use of the right arm and leg. The gauze in the abscess cavity was shortened every second day until its removal was complete by the end of the week. A short dressing was then applied daily until granulations commenced to spread from the lateral edge of the wounds. By now, a cerebral hernia had developed and continued to grow until it actually attained the size of a cricket ball and overhung the ear.

Hypertonic saline dressings were applied three times daily.

Gradually the hernia receded, and by November the wound became completely healed. The optic neuritis had also cleared up.

On Aug. 30th Dr. McArevey reported: "The swelling of the left disc is greatly reduced: the right optic nerve is still swollen considerably, but is receding. It would not be possible to know how much damage has been done as a result of the papillœdema."

Subsequent History.

Now, more than two years since his operation the patient is alive and free from all symptoms. The ear is dry. There is a pulsatile movement in the scalp occasioned by the large bone defect.

Most brain surgeons are conservative as regards the length of the dural incision. In this case the patient's condition became so critical that a wide exposure of the brain was thought advisable, which perhaps was justified by the subsequent result.

I am indebted to Drs. O. Fitzgerald and McGrath and McArevey for their useful help in the case, and to the nurses, who were untiring in their attention to the patient.