BRAIN ABSCESS OF AURAL ORIGIN.

BY

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ALTHOUGH brain abscess is by no means a rare complication of suppurative otitis media it is sufficiently uncommon to make the report of such cases a matter of interest. The following are brief summaries of six cases that have been under my care during the past year. Three have recovered completely, one died of a recurrence three months after operation, and two died without the abscess being found at operation.

CASE I.

A man, aged 37. He had had left otitis media for many years with offensive discharge and granulation tissue. He was admitted to the Ministry of Pensions Hospital, Liverpool, on October 28th, 1923, in a drowsy, semiconscious state. When first seen by me on November 2nd he was comatose; temperature 97°, pulse 40; tongue dry and furred; no eye symptoms.

Operation.—The skull was opened through the squamous temporal and half an ounce of fetid pus evacuated from the temporo-sphenoidal lobe. During the operation respiration ceased for about half a minute and was not resumed until the abscess had been opened. Uninterrupted recovery followed, and on December 27th he was able to go home for a few days. On January 25th, 1924, a radical mastoid operation was performed. On February 25th he complained of headache and vomited, and a few hours later became comatose with right-sided convulsions and died.

Post-mortem examination revealed a large recurrence in the temporo-sphenoidal lobe. The fatal termination was a great surprise to all, since up to the day of his death the temperature and pulse were normal and the man was going about apparently in good health. On retrospect, symptoms that might have aroused suspicion were slight headache, taciturnity, slowness in answering questions, and a certain moodiness and unsociability.

CASE II.

A boy, aged 12, was admitted to the Liverpool Stanley Hospital on November 7th, 1923, in a very drowsy condition and with sensory aphasia. The tongue was dry and furred. There were no eye changes. Chronic otitis media with slight offensive discharge was found on the left side. The mother was not aware of any ear trouble.

Operation.—The skull was opened as in Case i, without disturbing the mastoid, and a large abscess was evacuated in the temporo-sphenoidal lobe. Recovery was delayed by a large cystic hernia cerebri which had to be partly removed. On February 20th, 1924, a radical mastoid operation was performed. On March 9th he was discharged in good health and with no impairment of mental function.

CASE III.

A girl, aged 17. On April 5th, 1924, I saw this patient in consultation with Dr. C. L. Forde. There had been a recent attack of influenza with acute otitis media on the left side. Whilst apparently convalescent severe frontal and temporal headaches had set in, with vomiting on one occasion. On examination I found the mind clear and alert and the temperature and pulse normal. The left drum was red and the landmarks obscured, but there was no discharge and no mastoid tenderness. No eye symptoms were present and no localizing signs. The possibility of brain abscess was considered, but the indications were not thought sufficient to justify operation. On April 10th she became rapidly comatose and on the following day was admitted to the Birkenhead Borough Hospital in *extremis*.

Operation.—As only the most expeditious measure was practicable the temporo-sphenoidal lobe was rapidly explored through a vertical incision above the ear. No pus was found, but, the tension being much increased, a decompression operation was performed. Lumbar puncture revealed many lymphocytes, but no micro-organisms. Temporary improvement followed, but symptoms of meningitis ensued and death occurred on April 29th.

Post-mortem examination revealed a large abscess of the left lobe of the cerebellum.

CASE IV.

A girl, aged 13, was admitted to the Victoria Central Hospital, Wallasey, on May 9th, 1924, with temperature 99.2°, pulse 156, and with foul discharge and granulation tissue in the left ear. On May 11th the condition was worse, with temperature 103.6° and pulse 128. Vomiting was occurring and the child had sunk into a drowsy condition.

Operation.—A radical mastoid operation was performed, the dura of both middle and posterior fossae being exposed but not opened. Slight improvement followed, but on May 16th the child became very ill, and on May 17th was deeply comatose with Cheyne-Stokes breathing and complete incontinence. At a second operation the cerebellum was first explored, slight nystagmus having been observed. No pus was found, but on subsequently puncturing the temporo-sphenoidal lobe a large abscess was evacuated. Uninterrupted recovery followed and the child is now in excellent health.

CASE V.

A man, aged 25, had had left suppurative otitis media since Christmas, 1923. He was admitted to the Victoria Central

Hospital, Wallasey, on July 6th, 1924, with a history of severe headaches and vomiting during the previous three weeks. He appeared to be very ill and lay in a heavy apathetic state. The tongue was dry and furred; temperature and pulse normal; there were no eye changes. Slight rigidity of the posterior cervical muscles was present.

Operation.—Cholesteatomatous material was found in the mastoid. The temporo-sphenoidal lobe was explored without result. Subsequently a small abscess was evacuated from the cerebellum through an opening internal to the lateral sinus. The patient made an uninterrupted recovery.

CASE VI.

A man, aged 48, seen in consultation with Dr. Leggate on October 9th, 1924. During the previous week there had been dizziness, headache, and vomiting, inability to write, and very impaired memory, followed by increasing mental dullness. The tongue was very dry and furred, the temperature and pulse normal. He had had right suppurative otitis media for twenty years. There was slight nystagmus and strabismus with a degree of deficient power in conjugate movement of the eyes towards the affected side.

Operation.—The cerebellum was explored by numerous and deep punctures, both mesial and posterior to the lateral sinus, but without result. Exploration of the cerebrum was also negative. Cerebro-spinal fluid escaped under pressure, but was free from cells and organisms. Following the operation he continued in a dull apathetic state, but when spoken to answered questions fairly briskly, although for the most part very incorrectly. He died suddenly on October 22nd.

Post-mortem examination disclosed an abscess in the anterior angle of the right lobe of the cerebellum adjacent to the pons.

The foregoing cases illustrate the fact that localizing signs are frequently absent in brain abscess, and that, for this reason, it is often difficult to know whether the cerebrum or cerebellum is affected. In left temporo-sphenoidal abscess word deafness is usually present, but, if the disease be well advanced, the general hebetude will make it impossible to test for sensory aphasia. Crossed hemiparesis and homolateral oculo-motor paresis are, in my opinion, rarely present in temporo-sphenoidal abscess.

In cerebellar abscess nystagmus and some form of ocular paresis are the most frequent localizing signs, but even these are often absent (Cases iii and v), as also are asynergia and homolateral paresis. In my experience the most significant symptom of acute brain abscess is severe pain in the head, which is subject to the most terrible exacerbations. This is an early symptom and is invariably present. It continues until a dull apathetic state ensues, which is the precursor of coma.

Regarding operative treatment, it is agreed that the best procedure is to open the mastoid and endeavour to find the track of the disease. On exposing the dura the presence of a brain abscess is usually either immediately obvious by the escape of pus through a hole in the dura or suspected on account of inflammatory changes in the dura. Occasionally, however, the dura may present a normal appearance, and in such cases the investigation must be carried further by incising the dura and exploring the brain. In Cases iv and v localization of the abscess in the cerebrum and cerebellum respectively was only determined after negative exploration of the cerebellum in Case iv and the cerebrum in Case v.

Should the patient's condition be very critical and the signs be those of temporo-sphenoidal abscess, it is a much safer and quicker procedure not to disturb the mastoid but to make a vertical incision above the ear and explore the brain through the squamous temporal. This was done in Cases i, ii, and iii.

A point in treatment that seems to me of great importance is the making of a large opening in the dura and skull. The mere evacuation of the abscess does not of necessity adequately deal with the situation, for there is a large area of encephalitis around, which, unless decompressed, will maintain increase of intracranial pressure and thereby favour extension of brain infection. A sufficient removal of bone must be made to allow the swollen brain tissue to relieve itself by forming a temporary hernia cerebri. In the case of temporo-sphenoidal abscess, I do not consider it sufficient to remove merely the roof of the tympanum and antrum. Part of the squamous temporal should be removed as well. For similar reasons cerebellar abscesses, unless very small, should be drained behind or through the lateral sinus as well as internal to it. It is important to remember that a cerebellar abscess is much easier to miss than a cerebral abscess, and may, as in Case vi, elude the most thorough search.