CLINICAL RECORDS

AUTOGENOUS CEREBRAL ABSCESS

By J. BOWRING HORGAN (Cork)

IN view of the variations in detail which are advocated for the approach and drainage of a brain abscess and considering the ultimate supreme importance of such detail the precise record of any one case in which a definite plan of action has been strictly and successfully adhered to is worthy of minute consideration.

T. O'S., æt. 56, was admitted to hospital complaining of an attack of shivering of one week's duration. He stated that during this period he could not get warm. There was temporal pain on the left side and left-sided otorrhœa for seven days. He also complained of stiffness in the lumbar region, insomnia and some occipital headache. His health history was otherwise very good apart from increasing deafness in each ear for several years.

7.8.1941. On examination the right ear showed evidence of chronic middle-ear catarrh. The left tympanic membrane showed a posterior superior marginal perforation with granulation tissue; this was largely hidden by a prolapse of the posterior superior meatal wall. The discharge was minimal, purulent, fœtid and pulsating. The voice was heard at 3 metres in the right and at the auricle in the left ear. The fistula symptom was absent. Vertigo was not complained of, but a spontaneous rotatory nystagmus was evident on looking left. The patient was morose and somnolent and the cerebration noticeably slow. Nominal aphasia and dysphasia were well marked. Co-operation was not good enough to permit even a rough field test to be made. There was very slight loss of tone of the circumoral muscles on the right side. The ocular fundi were normal. Co-ordination was poor. The knee jerks were absent on each side and also the abdominal reflex on the right side. The right plantar reflex was questionably extensor. There was slight cervical rigidity. The patient was right-handed. Temp. 98° F. Pulse 56. Resp. 16.

It was concluded that a left-sided tempero-sphenoidal abscess was probably present and it was decided to carry out a radical mastoid operation in the belief that this would afford corroborative evidence. At operation, carried out the same day, a large cholesteatomatous mass was found. This had caused absorption of the posterior meatal wall, the outer attic wall and the tegmen antri, with resultant exposure of more than a square centimetre of the dura. This was covered by congested granulation tissue, between which and the cholesteatomatous mass a small amount of purulent secretion was present under tension. The outer bony wall of the facial canal was found to be deficient for some distance below the lateral semi-circular canal. The opening in the tegmen antri was freely enlarged forwards, backwards and outwards. Finally the vitreous lamina was removed from part of the knee of the lateral sinus and from the posterior fossa dura internal to same. These structures appeared to be healthy. A small amount of spinal fluid was removed for

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examination and, in the hope of checking meningeal infection, a full course of oral sulphapyridine treatment was initiated.

The spinal fluid was reported to show a high percentage of polymorphs, chlorides were 685 mg. and proteins 180 mg. each per 100 c.c. The Pandy reaction was positive. There was a mere trace of sugar but no organisms were found.

9.8.1941. General condition was unchanged, but headache relieved Four c.c. of spinal fluid removed. Pressure slightly less. Report stated that pleocytosis was less and that no organisms were found.

13.8.1941. Condition unchanged. Took drinks well. No pain. Inability to sustain conjugate deviation of the eyes to the left. Lay constantly on the right side. Constipation pronounced. Temp. 98. Pulse 58.

14.8.1941. In view of the symptoms the findings at operation and the onset of weakness of the right upper and lower extremities it was decided to explore the temporo-sphenoidal lobe. The granulating dura below this was accordingly incised for a distance of 1½ cm. from before backwards. A graduated brain exploring trocar and canula was passed very gradually directly upwards and the abscess cavity entered at a distance of 1½ cm. Having noted this distance on the canula the latter was reoccluded by its trocar and the instrument immediately withdrawn.

It was decided to drain the abscess by the " closed " method as recommended by Coleman. In order to ensure that the lie of the rubber drainage tube be " easy " and practically vertical to the tegmental dura the remaining mastoid cortex and tip was now removed to the extent deemed necessary to achieve this end. A black silk thread was tied securely around the distal half of a new No. 10 Jacques catheter 2 cm. above its eye after which the catheter was passed vertically into the brain in the track of the withdrawn canula, the abscess cavity being entered and drained at the depth previously ascertained. The outer end of the cathether was sutured to the skin at the lower angle of the wound and the remainder of the tube cut away 2 cm. outside this. The bone cavity was loosely packed with gauze moistened with acriflavine solution. The patient was nursed in the semi-recumbent position with the head almost vertical.

15.8.1941. General condition unchanged. Some difficulty in micturition. No obvious weakness of the extremities. Temp. 99·4. Pulse 68.

17.8.1941. General condition unchanged. Rotatory nystagmus on looking to the right. Two drachms of pus came away on gently rotating the tube *in situ*. Nominal aphasia still well marked. The gauze in the wound was changed daily, the outer end of the tube being covered with moist gauze. Temp. 97. Pulse 54.

20.8.1941. Appeared brighter. Reflexes normal. Co-ordination better. Little evidence of discharge from the tube but about five drops came away on gentle rotation of same.

26.8.1941. General condition little altered, but nominal aphasia slightly less. No evidence of purulent discharge from the tube since the 23rd inst. Temp. 98. Pulse 56.

29.8.1941. Much better. Dysphasia and nominal aphasia absent. Visual fields normal. Constipation still marked. Anxious to get up. Mental dullness replaced by childishness and irritability.

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8.9.1941. Tube taken out for the first time. The distal wall of the abscess cavity was found to be 3½ cm. from the dural opening. The tube was shortened by 1 cm., reinserted in the drainage track and resutured to the lower angle of the skin incision. There was no evidence of purulent discharge from the abscess cavity.

14.9.1941. Constipation no longer troublesome. General condition satisfactory, but remained childish and irritable. Slight serous discharge.

21.9.1941. Tube removed. Pulse 56.

24.9.1941. Plastic operation and closure of retroauricular wound.

26.9.1941. Healing satisfactory. Complained of cacosmia and was very childish and irritable.

The subsequent course was uneventful. His temperament was transformed into one of light-hearted amiability before his discharge from hospital with a dry ear on November 20th, 1941.

It will be seen that the diagnosis in this case was comparatively easy. Had it been possible to chart his fields it would probably have been found that all the classical clinical symptoms of a left temporo-sphenoidal abscess in a right-handed person, as detailed by Symonds, were present. This supposition was further supported by the pathological conditions found at the mastoid operation, the value of which source of information has been pointed out by Woods. The choice of the most appropriate time to explore the brain presented more difficulty. My personal experience of brain abscess secondary to disease of the temporal bone is that the aural surgeon is for some reason generally compelled to interfere before any noteworthy capsule has formed. Scott maintains that many cases of otitic brain abscess have no adventitious capsule and must be drained in this state. Cairns and Donald say that it is impossible to drain an area of acute purulent encephalitis and that it is probably unwise to disturb an abscess before it is localized. Thus, they point out, the diagnosis of brain abscess does not always indicate operation and that the success attending the surgical treatment of any one case depends not only on the type of operation performed and the avoidance of oblique drainage, but also on the time of operation. In this case I formed a definite opinion that the brain infection had actually occurred just one week before I saw the case and my decision to explore the brain one week after the mastoid operation was actuated by the onset of contra-lateral paresis of the limbs. In retrospect I think I could safely have waited some days longer. The really anxious time, however, was the fourteen days following the seemingly apposite drainage of the abscess. Though signs of spread of the infection were absent the general condition hardly registered any improvement and were it not for Cairns's strong admonition for patience I would have interfered with the drainage, a procedure which, as the subsequent course of the case proved, could only have been fraught with danger.

It is my experience that a cerebral abscess of otitic origin can always be drained to best advantage from below, that is from the mastoid through the tegmental region. This approach is the more direct; it ensures (in the semi-recumbent posture) the maintenance of gravity drainage and it obviates a new and complicated approach to the intracranial cavity. As in the case above detailed it often necessitates some additional resection of the mastoid bone especially of its tip, but whilst the additional time and trouble involved are

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small the advantage of avoiding oblique drainage is big. Owing to the necessity of daily attention to the mastoid wound it is not feasible to fix the extra-cutaneous portion of the tube in a starch bandage as advised by Coleman and Cairns, but the accurate stitch fixation below, of a direct and easy-lying tube, will be found adequate.

It will be noted that whilst there was no obvious purulent discharge from the site of the abscess after August 20th, that is six days after the tube has been inserted, the latter was not, even temporarily, removed (and shortened) until September 8th and not dispensed with until September 21st, that is for a period of six weeks. This period may be excessive in view of the later history, but experience teaches that procrastination is decidedly a lesser evil in these cases.

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