TEMPORO-SPHENOIDAL ABSCESS.

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MAY I draw attention to a few points in the treatment of temporo-sphenoidal abscess as illustrated in the progress of two apparently almost hopeless cases. Both were transferred from the medical wards, and I am much indebted to Lord Dawson and to Dr R. A. Rowlands for their notes of the cases. It is undoubtedly owing to the early diagnosis made by these physicians that much of the credit for recovery is due.

In both cases the mode of onset was somewhat similar, although the eye changes in the child rather pointed, for a time, to tubercular meningitis. The aural conditions in the two cases were very different, both as regards signs and operative findings. One case had every sign of mastoid disease, with a direct necrosed tract through the tegmen to the abscess; the other had signs of previous ear trouble only, and healthy tissue was situated between the indolent clot and the abscess, the mode of infection being therefore probably vascular.

At the operation I am always careful to thoroughly eliminate all the disease in the mastoid and middle ear, paying particular attention to the attic and zygomatic cells.

One of the greatest troubles in the after-treatment of brain abscess is cerebral hernia, which not only blocks drainage but so alters relations that it is increasingly difficult to know the site of the original abscess. This unfortunate condition is best prevented by making as small an exposure of the dura mater as is consistent with the complete removal of diseased bone, and at the same time by making only a small linear incision into the dura mater. If it should be a case of direct extension, the meninges are probably already shut off; otherwise, it is perhaps better to wait one day before proceeding beyond the dural incision, if the condition of the patient allows it.

I am much averse to indiscriminate puncture of the brain matter, because a microscopic examination of the brain, in a fatal case, revealed bacteria in every puncture mark. For this reason I never make more than three explorations, and then wait for subsequent symptoms and signs. The first puncture with the sinus forceps should be forwards and upwards, the next directly upwards, and the third backwards and upwards;

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this is in the order of the relative frequency of the site of a temporo-sphenoidal abscess. The forceps should, in every case, be kept fairly superficial.

I believe washing out of the abscess cavity to be unnecessary and frequently dangerous. Drainage of the cavity presents great difficulty owing to the expulsive action of the brain. Gauze and the ordinary rubber tubes are quite useless. A tracheotomy tube may be very useful with a superficial abscess, but by far the best is a stiff rubber tube, one-eighth to one-quarter of an inch in diameter, inserted into the cavity for the same distance as it was found necessary to insert the forceps in order to give free drainage. The tube should be long enough to rest on the lower shelf of the chiselled-out mastoid. Side holes should be made into the upper part of the tube. The mastoid cavity should then be so packed with gauze as to prevent the lower end of the tube from slipping off the shelf.

The operation should be performed as speedily as possible, in order that the patient may escape the damaging effects of prolonged anæsthesia. On no account should an anæsthetic be given for any subsequent probing. In my opinion, there is no question as to the lowering of the patient's general resistance by anæsthetics in these severe and toxic cases.

The dressing should be carried out daily and very thoroughly. The tube must be removed, cleaned, and replaced. It is advisable to shorten the tube gradually as symptoms indicate. Should there be any suspicion of blockage, indicated either by direct observation or from the symptoms, one must not hesitate to insert the sinus forceps along the original track. As these abscesses are frequently multiple, the surgeon should always be prepared for further explorations if symptoms indicate it. The case should never be given up as hopeless.

If a hernia shows signs of developing, the mastoid cavity should be packed firmly with gauze soaked in spirit.

CASE I.—Mrs A. B., aged 52, on the 10th December 1921 developed acute otitis media in the right ear following a cold. Except for the continuance of the aural discharge she apparently recovered, and went about her ordinary duties. On 25.12.21 she developed a severe "bilious attack," lasting fourteen days. She was occasionally delirious. 20.1.22—Although not confined to bed, she had "earache" and occipital headache. 3.2.22 — Admitted to hospital. She complained of headache and great lassitude. 4.2.22—She became semi-conscious, with cerebral vomiting. The fundi showed marked

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neuritis; pulse 120; respiration 24. Slight double ptosis developed, with flaccidity and pains of the left side of the face, left arm, and leg; Babinski positive on left side; pupils equal and reacting normally. The right ear showed foul-smelling discharge, and much redness and swelling of the posterior osseous meatal wall, and there was deep mastoid tenderness. The cerebro-spinal fluid was clear and not under pressure: it was sterile. Incontinence of urine and fæces and complete unconsciousness came on in the evening.

Operation.—The mastoid was found to be definitely infected, with a track of caries through the tegmen antri. The dura mater was bulging and discoloured. Sinus forceps inserted forwards and upwards, through a small dural incision, disclosed pus immediately; about 3 oz. were evacuated. The abscess was drained in the manner described above.

Progress of Case.—6.2.22—She could be roused; micturition was normal. 8.2.22—Complete coma present; paralysis of the whole of the left side, including the face; incontinence of urine was again present. Sinus forceps reinserted in the original track and much pus was evacuated. 29.2.22—Continuous gradual improvement was noticed, with decreasing weakness of left side; very lethargic but easily roused. Incontinence of urine was still present. The drainage tube was much shortened; there was little discharge. 1.3.22—Temperature and pulse rose; again comatose, with complete left hemiplegia and incontinence. The sinus forceps located a second abscess situated four inches directly upwards. A large tube four inches long and one-quarter inch diameter was inserted. 4.3.22—Drainage excellent, but patient still comatose. 12.3.22—She can be easily roused and the mental condition is much improved; there is some movement in the muscles of the left side. 25.3.22—Gradual improvement—slow speech and cerebration. She moves her limbs when asked to do so. Incontinence is improving. 7.4.22—Drainage tube was now removed and gradual recovery took place. 18.4.22—Patient was sent to the convalescent home with the wound healed and the mental condition almost normal: movement of the left side was fair, and she could just walk with assistance. 31.10.22—Patient was living a normal life, with no muscle weakness, and she was somewhat rejuvenated in ideas.

Case II.—D. K., aged 5, on 17.8.22 suffered from "bilious attack," lasting three days, with much vomiting; then earache developed on the right side, followed quickly by discharge which ceased three days later. During the next six days the child complained of frontal headache, vomiting after food, night sweats, constipation and increasing drowsiness.

29.8.22—Admitted to hospital. Pale, thin child, light-headed, drowsy, and with constant yawning. *Ears—Right*, drumhead showed

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healed perforation at lower anterior quadrant; no discharge; slight tympanic redness; no mastoid redness or tenderness. *Left*, drumhead showed slight redness about malleus. *Eyes*—The right pupil was dilated but both reacted. There was no squint: the fundi showed no change. *Face*—Weakness of left side was observed. *Limbs*—Normal, perhaps some lower limb rigidity; Kernig present. *Cerebro-spinal fluid*—Clear, under pressure. Cell count: 28 per c.mm. Type: 88 per cent. small lymphocytes; 12 per cent. polynuclears. Protein: slight excess.

30.8.22—Child was more drowsy, with slight weakness of the left arm and an occasional cry. Babinski was positive on the left side. There was no optic neuritis. 31.8.22—Now semi-conscious, with left facial palsy, and the whole left side exhibits great weakness. 1.9.22—Right external squint and ptosis developed, and the patient could only be imperfectly roused. There was stiffness of the neck, definite left hemiplegia, and the fundi showed slight papillœdema. *Cerebro-spinal fluid*—Cell count, 26 per c.mm. Differential count, 23 per cent. polynuclear; 27 per cent. small lymphocytes. A temporo-sphenoidal abscess was diagnosed.

Operation.—The mastoid had a normal appearance, but the antrum was occupied by a semi-solid, jelly-like cast. The sinus was healthy. Dura mater inflamed but not bulging, and, when incised, clear fluid escaped under pressure. The sinus forceps, passed forwards, upwards, and backwards into the temporo-sphenoidal lobe, gave no result.

Progress of Case.—On 2.9.22—Pneumococci were grown from the antral cast. The patient was quite unconscious, with complete hemiplegia. Sinus forceps was passed forwards and 4 oz. of pus evacuated; a stiff tube was inserted. 4.9.22—The child was better and could be roused. The forceps inserted daily; the abscess was draining. 6.9.22—Child again unconscious; the forceps evacuated 1 oz. of pus. 8.9.22—Child can now be roused; left hemiplegia is present; the right pupil is dilated and fixed, but the facial palsy is better. 15.9.22—Movement is noted for the first time in the left arm. The abscess is draining well with the tube 3 in. in length. 20.9.22—General improvement noted; drainage tube removed. 26.9.22—Some movement in the left leg is present. 4.10.22—The wound is healing; there is no ear discharge; movements are fair and the eye condition stationary. 15.10.22—The child is making uninterrupted recovery: the squint has disappeared and movements are almost normal.

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