CLINICAL RECORD

CRANIAL OSTEO-MYELITIS COMPLICATING ACCESSORY SINUS SUPPURATION.

By NEIL MACLAY, Newcastle-on-Tyne.

DIFFUSE cranial osteo-myelitis is a rare disease and the mortality therefrom is very high.

When we exclude those cases which are due to syphilis, trauma of the cranial bones and pyogenic disease of the temporal bone, we find that suppuration in the nasal accessory sinuses is by far the commonest cause of this dire malady.

When occurring in connection with accessory sinusitis, it may be classified as post-operative and spontaneous: the former is the more deadly type with a mortality of 100 per cent. in the recorded cases.

Pathologically the disease may be described as a purulent rarifying osteitis which ultimately produces a more or less complete destruction of all the bone elements.

The diploë become replaced by granulation-like tissue and pus, and as the pyogenic process invades the two tables of the bone, collections of pus form under the pericranium and between the bone and the dura mater. The route by which the infection reaches the bone has not been determined in any definite way, and though many observers blame the diploë, there is some ground for the belief that the disease may begin, at all events in some cases, in the bones forming the inner angle of the orbit which are devoid of diploëtic substance.

The disease has an insidious onset, and until the diploë are involved there may be much uncertainty as to the nature of the condition and very valuable time lost before treatment is commenced in earnest.

In the post-operative variety the appearance of a small inflammatory swelling about the site of operation, accompanied by headache and pyrexia and followed by the characteristic puffy or circumscribed œdematous swelling of the scalp, with œdema of the eyelids, should complete the diagnosis and call for immediate action. Remissions or periods of calm, when all seems well, are a characteristic and heartbreaking feature of the disease.

https://doi.org/10.1017/S0022215100022544 Published online by Cambridge University Press

Cranial Osteo-Myelitis

I have dealt with three cases of diffuse cranial osteo-myelitis, two of which were post-operative and one spontaneous and arising in connection with suppuration in the frontal sinus. The spontaneous case and one of the post-operative cases recovered.

According to the published records, the prognosis in the post-operative variety is so uniformly bad that I think the following history of a case believed to be cured will be of some interest and encouragement.

J. B., æt. 30, consulted me towards the end of June 1920, complaining of nasal obstruction and dropping of discharge into the back of his throat.

History.—He had apparently never been robust and had been troubled with a recurring cough for some years, but there was no history of nasal symptoms till 1918, while on war service in France. He then became aware of some nasal stuffiness and discharge and occasional frontal headache.

Condition on Examination.—He had a sallow complexion, looked under weight, and was obviously obstructed in his nose.

The nose was packed full of mucous polypi, and there was evidence of pus anteriorly on both sides. The mouth and fauces were clean and posteriorly polypi could be seen in the choanal openings with streaks of pus on the posterior ends of the inferior turbinals. Transillumination and radiography suggested pansinusitis. He had no pyrexia and no complaint of headache.

In July 1920, nasal polypi were removed by the cold snare on two occasions and the antra were punctured, giving proof of the presence of pus. The pus yielded a luxurious growth of staphylococcus aureus.

During the last week of July 1920 he was given a general anæsthetic and an intra-nasal operation was performed upon the antra, at the same time the ethmoidal cell areas were dealt with by means of the ring knife and nibbling forceps, and the fronto-nasal passages were cautiously enlarged with a rasp.

He appeared to be making a good recovery from the operation, and there was no ecchymosis or other sign of trauma externally till the sixth day, when a small swelling appeared at the inner angle of the left orbit accompanied by a little puffiness of the eyelids on the left side. At the same time he complained of some headache, and the little swelling rapidly became red and soft. His temperature registered 99°.

The inflammatory swelling was opened and a very small quantity of pus evacuated. A probe failed to detect bone and the abscess was regarded as superficial. The redness subsided tardily, as did the œdema of the eyelids.

https://doi.org/10.1017/S0022215100022544 Published online by Cambridge University Press

At the end of the first week in August 1920 the local and general conditions had improved sufficiently to lead one to suppose that all would be well. At this time I went on holiday and did not see the patient again till early in September, when his condition aroused in me some concern.

He complained of headache, chiefly occipital; the root of his nose was swollen and the left eyelids were much more œdematous than they had previously been; there was also a little œdema of the right eyelids, as well as the scalp over the left frontal sinus, and above the root of the nose. The temperature was 99.4°.

Under general anæsthesia an incision was made in the middle line of the forehead, commencing 2½ inches from the nasion and extending down the middle of the nose, and this was joined by an incision along the left supra-orbital margin.

The left nasal bone was found to be in great part necrosed and was removed, together with a part of the nasal process of the maxilla, and a portion of the nasal process of the frontal and the lachrymal bones. The whole of the anterior wall of the left frontal sinus, including the bridge and a good part of the floor, was removed, as well as the outer table of the frontal bone immediately above the sinus where there was unmistakable evidence of osteo-myelitis. The whole area of operation was treated with B.I.P.P. and incompletely sutured.

The local and general conditions seemed to improve, and the temperature, which was never higher than 100°, became normal and even subnormal. It is worthy of note, however, that the headache, though lessened, did not for one whole day subside, and there was always some purulent discharge from the upper end of the scalp wound.

An autogenous vaccine was employed at this period.

On 8th October 1920, that is about a month after the last-mentioned operation, a circumscribed œdematous swelling appeared higher upon the forehead and to the left of the middle line. The puffy tumour was exquisitely tender to pressure. Temperature rose to 99.4° and the headache became aggravated. In the meantime the eyelids on each side became very œdematous and patient could not see out of his left eye. On 9th October 1920 the median incision in the scalp was re-opened and extended farther up and at same time a transverse incision was made at the level of frontal eminence and the flap turned aside.

Under the site of the puffy tumour the bone was necrosed and bathed in pus—it had a worm-eaten appearance. The necrosed area about the size of a florin was removed and the dura mater exposed.

The margin of the resulting hole in the bone was seen to be

https://doi.org/10.1017/S0022215100022544 Published online by Cambridge University Press

Cranial Osteo-Myelitis complicating Accessory Sinus Suppuration.—Neil Maclay.



https://doi.org/10.1017/S0022215100022544 Published online by Cambridge University Press

https://doi.org/10.1017/S0022215100022544 Published online by Cambridge University Press

invaded by granulation tissue and pus between the tables. This was nibbled away until what looked like healthy bone was reached. B.I.P.P. was employed and gauze drainage with partial suture.

The eyelid œdema subsided quickly but not completely, and the patient felt better, though the headache still persisted. During the rest of the month of October the temperature remained normal or subnormal, and the wounds were much cleaner.

On the 30th of October 1920 another puffy swelling appeared, this time on the right of the middle line, and the eyelids again became very swollen ; the temperature rose to 100·6°, pulse 90.

On 1st November 1920 an incision was made so as to expose both frontal sinus areas, and the median incision was re-opened and extended farther up. The right frontal sinus was ablated and bone removed from the right half of the frontal. It was found at this time that there was an extra-dural abscess, and the septic granulation tissue had invaded the bone right up to the middle line. Nine days later a tender spot was discovered above the frontal eminence on the left side, and a fresh exposure of the skull ensued and necrosed bone, and a large extra-dural abscess dealt with.

This melancholy history was repeated on three subsequent occasions, the last operation being performed on 15th January 1921.

From first to last the greater part of the left half of the frontal bone up to the coronal suture was removed, and a strip 2 inches wide of the right half up to the same suture. When once the septic process ceased, healing took place rapidly, leaving the large pulsating dural area covered only by scalp. After the last operation the headache which had persisted for so many months disappeared at once, and the whole facial aspect changed and anxiety gave place to repose.

The rapidity with which new bone has formed and covered over the exposed dura is to me very surprising. At the end of three months there was only an area about the diameter of a florin on the left side where pulsation could be seen, and now the pulsation is barely perceptible.

There is, I think, good reason for the belief that in this case the osteo-myelitis began in the bony framework of the nose and not in the diploë of the frontal bone, and I cannot help thinking that in some of those cases where the disease has followed external operation, the route of infection is probably identical.

https://doi.org/10.1017/S0022215100022544 Published online by Cambridge University Press