C A S E S

IN WHICH

PERFORATION OF THE MASTOID CELLS IS NECESSARY.

BY

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IN the following remarks no reference will be made to the very common instances in which, after inflammation of the middle ear, the usual signs of abscess in the mastoid process, with softening of the external plate of bone, are present; these, especially in the case of children, are so often met with and treated by a free opening on the ordinary principles of surgery, that they are perfectly familiar to everyone. There are, however, a certain number of cases from which the usual appearances, symptoms, and local conditions are absent. Among such may be classed especially those in which the external plate of bone is healthy, but pus has formed within the cells (with its attendant dangers to life), and others in which, although the external plate of bone is the seat of caries, purulent matter is not within the cells but collects elsewhere.

In a previous contribution to this Society on 'Disease of the Mastoid Bone' (vol. lxii of the 'Transactions'), the conditions under which a perforation should be made into the mastoid cells were discussed, especially in regard to those cases where some of the usual evidences of pus at no great distance from the surface were absent, for where these are present the necessity of this proceeding is universally admitted. The indications for operation in cases of purulent discharge from perforation of the tympanic membrane included the following symptoms: continuous pain in the mastoid region, with oedema on deep and prolonged pressure, pain increased by the recumbent position, a high temperature, and a severe rigor.

Further experience since 1878 has not only confirmed the views which I then expressed, but has forced upon me the conviction that the conditions under which relief may be afforded, and a fatal termination avoided, are more numerous and more various than might be supposed from the paper referred to. In what follows, when the mastoid cells are said to have been opened, it will be understood that the instrument used is a drill (see woodcut) made in such a manner that the distance to be penetrated is accurately regulated by a stop, so that any risk of boring too deeply is avoided. The perforation is readily accomplished in a few seconds when the incision to the bone has been made. After frequent employment of this plan I can confidently speak of its superiority both for perfect safety and for great rapidity.

In many instances, especially in the cases of adults, when it becomes a matter of immediate urgency to make an opening into the cells, and when the outer table is healthy, the advantages will be obvious to those who have had occasion to resort to this proceeding.

The following cases will illustrate the various and

serious conditions which may occur when the mastoid process becomes inflamed, and which may urgently call for the letting out of pus, the precise position of which it is not always easy to point out.

CASE 1.—On January 31st, 1884, I saw, with Dr. Martin, of Somers Place, Hyde Park, a young lady, who, after an attack of acute inflammation of the left tympanum followed by a perforation of the membrane, had for some weeks continuously a most profuse purulent discharge. Beyond the very copious nature of the discharge there was no symptom which called for notice. Local treatment did not materially affect the state of the ear. There was no redness or swelling over the mastoid, and only slight tenderness on very firm and continued pressure, which was relieved by leeches and fomentations. A few weeks later, after a rise of temperature to 104° F., she had severe pain in the muscles of the left thigh, and a dragging of the foot of the same side. She walked as in infantile paralysis. The pain passed off. Early in April there were several sudden rises of temperature up to 104° , only maintained for a few hours. At no time had there been rigors. Taking into consideration the long continuance of the very profuse discharge, the symptoms connected with the thigh and impaired movements, the rises in temperature, and the fact that firm and continuous pressure on the mastoid process now for the first time gave rise to a sharp pain, although there was no œdema or redness, I advised that an opening should be drilled into the mastoid cells. Sir James Paget saw this case independently of me, and agreed as to the advisability of this proceeding. When the incision was made the bone was healthy. In spite of this the bone was drilled, and on removing the drill foetid matter escaped through the wound. No further bad symptom impeded recovery.

CASE 2.—On May 30th, 1883, a gentleman, æt. 35, gave me this history. Since the middle of the previous January, when he had acute pain in the left ear followed by

some purulent discharge, he had almost constant pain over the mastoid region. There was a perforation of the tympanic membrane, and some, though not profuse, discharge. There was considerable tenderness and redness over the mastoid process. On his return to Lincolnshire that day he applied two leeches, and afterwards hot fomentations, which gave him for a few days great relief. However, he soon began to suffer as before, and did not come to town again until October. There was then a good deal of swelling, the redness was much increased, and there was considerable œdema.

On cutting down on to the bone there was a large area quite exposed, but no pus was found in the mastoid cells. A few days afterwards a long probe was passed from the wound in a downward direction along the border of the sterno-mastoid muscle to the lower border of the thyroid cartilage. Here I made a second opening and passed a drainage-tube through. At a later date, a third opening was made down to the bone about two inches behind the first one, letting out more pus. The pain now shifted further back, and pressure over the splenius capitis caused pus to pour out of the external canal of the ear.

Sir James Paget now saw the patient with me, and decided that another exit must be made for pus in this part of the occipital region.

After a troublesome dissection in this situation matter was found in contact with the bone. Thus pus had burrowed under the scalp in the following direction. From the tympanum through the bone to a point outside the mastoid process, thence to another point under the splenius and complexus muscles. Between the last opening and the second a drainage-tube was passed. A very large area of the bone was found exposed. The patient made a good recovery.

CASE 3.—A case in some respects like the first narrated occurred in St. George's Hospital in July, 1884. A middle-aged woman, after an attack of acute inflammation of the

right tympanum followed by rise of temperature, severe rigors, and local evidence of matter within the mastoid cells, came under my care. On making the incision the bone was perfectly healthy, but on perforating the cells a quantity of foetid matter escaped. All urgent symptoms passed away at once. A week afterwards, beyond a slight discharge from the wound, the patient had no inconvenience. She was, however, seized with a rigor: this was followed by pus in the knee-joint; the joint was opened, but pus spreading upwards and the joint becoming disorganised, it became necessary to amputate the limb above the knee. This was done by Mr. Haward, and the patient made a good recovery.

CASE 4.—A boy whom I saw for the first time on December 6th, 1883, had a profuse discharge from a recent perforation in the left tympanum. There was pain and swelling over the mastoid process extending above the ear into the temporal region. Free vertical incisions were made through the scalp over the mastoid, and on the left temple, letting out pus. The bone was denuded, and a probe could be passed under the scalp from one opening to the other. A few days later, further swelling about three inches behind and above the first opening made it necessary to make another incision in the occipital region. The forefinger, passed into all three incisions, showed that very large areas of the bone had been exposed. Notwithstanding the free opening, pain continued with great severity and was accompanied with great constitutional disturbance.

A general cellulitis of the scalp now set in and a fatal ending seemed almost certain. Sir James Paget now saw the case and advised further enlargement of the wounds, and agreed as to the necessity of further search for matter. The openings were enlarged. The boy's condition slowly improved, and when able to travel he was taken abroad. I saw him in October of this year, and was told that the opening over the mastoid had only recently completely healed.

CASE 5.—On three or four occasions, at long intervals extending over three years, I had seen a young man in consequence of occasional head pains and giddiness depending on a perforation of the left tympanum, in which diseased bone was evidently present.

At the beginning of 1884, whilst he was a few miles from home, he was seized with acute pain in the head and intense giddiness. He was taken home, and in the course of a few hours became delirious and afterwards partially unconscious. For two or three days previously he had complained of a feeling of fulness, and of some pain over the mastoid bone. On the next day, when I saw him, he was in the same state. The sclerotics were much injected.

Although there was no swelling, but some redness, and no œdema, I thought that under the circumstances it would be best to perforate the mastoid cells with a drill. At the time he was so far unconscious that he recognised no one, nor subsequently did he ever remember what had occurred. The mastoid cells were so gorged with blood that a large quantity poured out when I removed the drill. There was no pus in the cells. Within two hours of the operation he became perfectly conscious. This young man suffered for many weeks from various symptoms of cerebral irritation, occasional extreme intolerance of light, severe headaches being the most prominent. It must be admitted that had I not formed an opinion (proved to be erroneous) as to the probable presence of pus within the mastoid cells I should not have proceeded as I did. The error in judgment, however, was most likely of material good as regards the loss of blood.

CASE 6.—In referring to one more case, I beg to call attention to the occasionally slow and insidious course of the morbid process which may eventuate in pus within the mastoid cells.

A gentleman between 50 and 60 years of age, first consulted me on Feb. 11th, 1884, for a catarrh of the

tympanum which had come on after a severe cold on January 29th, and was accompanied with a feeling of numbness and weight in the mastoid region. I saw him at intervals of a month, or a fortnight, up to the end of July, during which time he had occasional leeching and counter-irritation over the process. At no time was the pain severe enough to interfere with the daily duties of a very active political life, and at no time was there more than slight pain on very firm pressure over the bone. At the end of July, in anticipation of the probable necessity of perforating the cells at a later date, he was seen by Sir James Paget in consultation with myself. There were then no urgent symptoms beyond very slight œdema on firm pressure. It was therefore decided to wait for clearer symptoms of pus within the bone. I did not again see him till October 11th, when he told me that three days previously there had been very decided pain. On the next day I let out a quantity of foetid pus from the cells, the outer table of bone being quite softened by caries. Throughout the entire illness he had no constitutional disturbance.

I am encouraged to bring these cases before the Society by the belief that perforation of the mastoid cells is more frequently and urgently called for than might be supposed from the literature of the subject.

(For a report of the discussion on this paper, see 'Proceedings of the Royal Medical and Chirurgical Society,' New Series, vol. i, p. 328.)