

TRAUMATIC EPILEPSY, APHASIA, AND PARALYSIS OF SIX YEARS' DURATION, TREATED BY TREPHINING : RECOVERY.

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G. T., aged thirty, a discharged soldier, was admitted under my care on March 10th, 1891, with the following history :— About six years earlier, when riding a horse, the animal fell, throwing him violently on his head. His foot catching in the stirrup, he was dragged for some distance, his head being in contact with the ground. He was picked up in an unconscious condition, and removed to the Meath Hospital, where he did not regain consciousness for a fortnight. He remained in the Meath Hospital for about four months, and when discharged his principal ailment was a hesitancy in his speech. He was then retained for a further period of five months in the Military Hospital at Portobello Barracks. His speech then being no better, he was discharged as being unfit for military duty. Within a fortnight of leaving the service he had a severe attack of epileptiform convulsion, which had recurred frequently at irregular intervals—there being sometimes as many as three in a day, and sometimes no attack for a month. He noticed that the seizures were most liable to occur when he was exposed to strong sunlight, being thus more frequent in summer than in winter. He could always tell when an attack was about to come on by the occurrence of bright flashes before the eyes, generally stellate in shape, or a feeling as if some force applied from behind was shoving his head downwards with consider-

able strength. These symptoms might exist separately or together. At other times the attack was preceded by total blindness. After the convulsions ceased a feeling of depression remained, frequently lasting for a week. Since the commencement of the epileptiform seizures he had suffered from continual dull frontal headache. The urine, of specific gravity 1020, contained no albumen, but slight trace of sugar.

The patient presented a heavy and dull cast of countenance, with a lifeless expression of the eyes, such as is frequently seen when mental power is deficient. On being questioned he looked confused, and attempted to answer, but was evidently unable to articulate the word he required, and eventually answered in monosyllables. At other times he would make no effort to reply, although it was evident he fully understood what he was asked. When he spoke his voice was monotonous, with a considerable interval between each word, giving rise to a peculiar clipping of each word, particularly noticeable at the commencement of a sentence. Being asked to name one of his friends standing by, he was frequently unable to do so. Tremors existed in his left hand and arm, and the left side of his face twitched frequently. There was great deficiency in the muscular power of the left hand and arm, but sensation was unimpaired. The knee reflexes were normal, and ankle clonus was absent.

On March 21st, 1891, my colleague, Dr. Swanzy, kindly examined the patient's eyes, and found the field of vision and ophthalmoscopic evidences normal. A triangular scar of the scalp existed in the left occipital region, slightly above which was to be felt a well-marked circular depression of the skull, about half an inch in diameter. This corresponded in position to the second annectant convolution of the brain.

On March 24th, 1891, I made a V-shaped incision with its base above, through the scalp at the seat of the injury

I found the subaponeurotic cellular tissue intimately attached to the depressed piece of bone; this being removed, a $\frac{3}{8}$ -inch trephine was applied at the seat of depression, and the bone, which was found to be of abnormal thickness and density, there being no diploë, removed. On examining its internal surface it presented no evidence of having been depressed, nor was there any evidence on examining the internal aspect of the skull in the immediate neighbourhood of the trephine hole with a probe. It was, however, clear that the great thickness of the bone in this position was the result of chronic inflammatory changes. The dura mater, which was now examined, bulged into trephine hole, and did not present the silvery appearance of that membrane when healthy; it was evidently thickened, and there was no visible pulsation of the brain. On pressing the dura mater, and thus displacing the fluid beneath it, a slight pulsation was to be felt. An aspirator needle was passed through the dura mater, and some serous fluid removed. A large quantity continued to flow, after the needle was withdrawn, through the opening made by it. The brain pulsation now became distinct and natural. The removed portion of bone, which in the meantime had been preserved between sponges in a warm antiseptic solution, was broken into small pieces, and sufficient nearly to fill the trephine hole was placed in it, room being, however, left for a drainage tube, the end of which corresponded to the opening in the dura mater; the wound in the scalp was sutured, and dressed with zinc sulphite gauze.

March 25th.—The temperature was 99° F., the pulse 76, and the respirations 24. The patient passed a fairly good night, although disturbed at intervals by vomiting. He was given $\frac{1}{8}$ -grain of morphine at midnight. Owing to the dressings being saturated with fluid they were removed. It was then seen that the fluid came from the drainage tube in

a pulsating manner corresponding to the pulsations of the brain, which were very visible beneath the scalp. At 4 p.m. he spoke for the first time since the operation, and with much less hesitation and more distinctly than previous to operation.

March 26th.—The temperature was 98.4° . The patient passed a good night; the dressings were again removed. The pulsation of the scalp was noticed to be much less than on March 25th. Twitching of the left side of the face, and drawing of the mouth to the left, was noticed during the day; but this was not so marked as before operation.

March 27th.—The temperature was 97° . The wound being healed, the stitches were removed and the drainage tube washed out. It was now noticed that the pulsation of the scalp had ceased. The patient expressed himself as being much better and free from headache, while the speech showed marked improvement. From this time the patient continued to improve, and on April 1st the drainage tube was removed and he sat up in bed for some hours.

On April 4th all dressings were removed, and he was allowed to walk about the hospital. There was no pulsation or depression at the seat of operation, the bone replaced in the trephine hole having evidently firmly united. It could not be found that any portion of the skull was deficient. The symptoms he presented before operation were markedly changed, there being but slight hesitancy in speech. He had no difficulty in using any word he required, while his eyes had a bright intelligent look. There was no tremor in his left hand and arm, the muscles of which were rapidly regaining strength, and no epileptic seizure had occurred since the operation.

On April 25th, one month after operation, the patient was sent to the convalescent home, the only abnormality then existing being a slight hesitancy in his speech and an irritability to much noise.

Since writing the above I have seen his wife, who informs me that he has no return of the symptoms, and that his speech has much improved during the ten months which have passed since the operation.

SIR WILLIAM STOKES thought that Mr. Heuston should be congratulated on the result he had obtained in the remarkable case he had just detailed. Sir William Stokes had previously had the patient under his care in the Meath Hospital, but he could not persuade him to submit to the operation of trephining, or rather the patient's wife would not consent to have it performed. Sir William Stokes had shown the case to Mr. Victor Horsley, who happened to be in Dublin at the time, and he also urged on the patient the desirability of the operation, but in vain. Mr. Horsley thought that probably an unabsorbed clot of blood would be found at the situation where the injury was received, but apparently this was not found. The trouble was then probably caused by pressure from the thickened or hypertrophied condition of the bone at the seat of the injury.

MR. WHEELER stated that one of the first cases that he had trephined for epilepsy was a young man, a soldier, who had his skull fractured in the left parietal region by a kick from a mule. A splinter of bone was driven into the brain, causing epileptic seizures. He had detailed the case nearly twenty years ago at the Surgical Society, and would only add, that this patient made a good recovery, and has continued in perfect health, as far as he knew, ever since. The second case was a man of forty years, brought to him by his former pupil, Dr. Kelly, who had been suffering from occasional epileptiform convulsions for three years, and who, three months before he came under his notice, had convulsions every eight or nine days. After careful examination it was ascertained that he had received a severe blow about four years before in the right front temporal region. After a little trouble a cicatrix was found in this situation, and after some consideration he placed the crown of an inch trephine over the bone corresponding to the cicatrix already mentioned. The inner table of the bone removed was much thickened and adherent to the dura mater. Suffice to say rapid recovery followed, and three years ago the man was well. The third case that he could recall the history of at present was a

patient in the City of Dublin Hospital, sent by Dr. Lyster, of Kilkenny, for epileptic fits, very occasional. He was only able to ascertain that the patient had had slight seizures since he had received a blow fracturing his skull close to the left parietal eminence. He suffered from word-blindness, and it was for this that Mr. Wheeler trephined him over the depression; the inner surface of the bone was thickened, and the dura mater thickened and adherent. There was not any abatement of the word-blindness from this operation, and it was not until three or four days after, when observing the dura mater bulge—into which he made an incision, and pus flowed out—that the patient improved, and finally recovered. The next case that he could recall differed from the preceding cases, inasmuch as it occurred in a young male adult, who suffered from a congenital deficiency, and had the operation of trephining recommended for him many years previously by Sir James Simpson. The deficiency existed in the site of the lambdoid suture of the right side; pressure on the edge of this deficiency caused great pain, and symptoms as if the patient was about to have a fit. He had suffered from as many as twenty-five fits and more in the twenty-four hours. After operation the patient lived for three days, and had no return of the epilepsy, although he had one seizure during the operation, and two before. In all the cases that Mr. Wheeler had operated for epilepsy consequent upon injury, he had found the dura mater thickened, and within a very recent date he had the opportunity of seeing Mr. Nixon operate over the site of an injury to the skull; when the bone was removed in this case the dura mater was enormously thickened. Epilepsy caused by injury like the cases quoted was nearly always cured by operation in Mr. Wheeler's experience; but he had over and over again declined any operative procedures in what was termed general epilepsy, the exact site of the "nodus epilepticus" not being defined. There were forms of epilepsy where one might gauge the centre where the lesion was. Dr. Heuston had mentioned that the seventh nerves were engaged; it would be interesting to him (Mr. Wheeler) to know whether the aphasia improved as the muscular power was gained, for his observations led him to conclude that there was an almost definite ratio between the two. There was not any doubt that the patient whose history had been detailed, suffered from aphasia.

MR. SWANZY said:—I regret that Mr. Heuston has not offered some explanation of the symptom of difficulty of speech from which

the patient suffered. In the title of his paper he has termed it aphasia, but in the course of his paper he has, I venture to think, wisely avoided that term. Having had the opportunity of carefully studying the case several times, I formed the opinion that the difficulty of speech was one of articulation, dysæsthesia, rather than aphasia. The man could speak, and had no hesitation in finding the right words, and he understood all that was said to him. He could not write well, for he had never learned to do so. When I first saw him, long before the operation, I thought it probable there was a lesion, hæmorrhage, or rupture of fibres in the pons or medulla, giving rise to the dysæsthesia, twitching of the fingers of the left hand, and some blepharospasm which he had at the time. The result of the operation shows that there could have been no material lesion there; but I still think these symptoms were distant symptoms due to derangement of functions in those parts, rather than in the cortex at the seat of lesion.

MR. NIXON said he thought no hard and fast rule could be laid down as to replacing the bone, as this must altogether depend on the condition of the part removed. In a case in which he had recently trephined the bone was in some places $\frac{1}{2}$ inch in thickness—it was irregularly thickened, which greatly increased the difficulty of the operation, as owing to the density of the skull over forty minutes were occupied in removing the first disc of bone. It was hard, dense, without diploë, and if replaced he believed it would have acted as a foreign body. He thought Mr. Heuston was to be congratulated on the brilliant result he had achieved in the case he brought forward to-night.

The PRESIDENT referred to trephining in such cases, and believed the operation was one too often put off in the absence of serious symptoms. Serious symptoms often develop suddenly. The President referred to a case alluded to in his address on “Head Injuries,” at the opening meeting of the Surgical Section of the Royal Academy of Medicine last Session. The patient, a gentleman, had symptoms which, in his opinion, pointed to the necessity for trephining; but his (the President’s) hands were tied at consultations, and the operation was not permitted. The patient’s condition became much worse, and at a later period a portion of bone exfoliated, and the patient recovered.

MR. HEUSTON said the manner in which the bone was replaced was as follows:—The bone being broken into small fragments by a bone-forceps, those fragments were placed in the trephine hole,

resting on the dura mater, with the intention that they should unite and further the process of union of the skull. This was done, not alone owing to the fact that it was so highly recommended by different authorities, but also that he had, in former cases of trephining, ample opportunity of observing how fully they attained the intended object. In one case, where repeated operations had been performed, in the first operation no bone had been introduced, and a permanent opening in the skull remained, whilst in the later operations bone had been placed in the trephine holes, and after a short period no external evidence of the operation remained. He was glad to hear that Sir William Stokes had Mr. Victor Horsley's concurrence with him in the advisableness of operation. In reply to Mr. Wheeler's observations respecting the implication of the seventh nerve, he would refer him to the spasmodic contractions of the left side of the patient's face as indicating irritation of that nerve. The patient's hearing was not, however, implicated. His opinion as to the nature of the case agrees very much with that expressed by Mr. Swanzy, except in that there were, in his opinion, distinct evidences of aphasia as noted in the case. He was of the opinion that the chief symptoms were due to an osteoplastic osteitis, with a pachymeningitis externa, giving rise to a pressure on the brain in a twofold manner—first from the thickening of the bone and dura mater, and secondly from an increase of the subdural fluid; otherwise he could not understand the improvement in the case after operation, or the absence of pulsation of the brain when the bone was removed.