

small gritty pieces which hung about the lining membrane of the sac, particularly at the neck, where it had been incised; these I found it impossible to extract, and hoped they would flow away with the urine. I washed the part out well with warm water, by means of a syringe attached to a catheter passed into the sac. I searched diligently for calculi in other parts of the bladder, but could find none. The corrugated condition of the coats rendered the search more difficult and less satisfactory than usual. The operation was necessarily very long, but during the greater part of the time he was under the influence of chloroform, and there was not much blood lost. The chief bleeding took place when I extended the incision in the perineum.

On the 15th, I passed my finger into the wound, and discovered two small fragments of calculus, which I removed with polypus-forceps. On the 16th, I discovered and extracted a larger piece. These were in the deep part of the wound. On the 18th, 20th, and 22nd, I passed my finger through the wound into the bladder, and could discover no fragments: also explored with sound, straight and curved. The latter I could turn down into the sacculus, and, with the finger in the rectum, could feel it in the sacculus. Also passed a sound by the urethra. Being unable to discover any fragments, I allowed the wound to heal, which it soon did. In October, he told me that he had no pain, but had not reacquired the complete power of retaining the urine.

I saw this gentleman on Feb. 9th, 1856. He was in good health, and told me that he had not been troubled with any return of his complaint.

REMARKS. It happily rarely occurs to us in the operation of lithotomy to find the stone encysted. When it is so, it forms a difficult, perhaps an insurmountable obstacle, to the performance of the operation. Nevertheless, an examination of the specimens in our museums proves that cysts of the bladder, as they are called—that is, pouches formed by a hernial protrusion of the mucous membrane between the muscular fibres—are no uncommon accompaniments of stone; indeed, they more frequently owe their origin to the presence of a calculus than to any other cause. They seem to be related rather to the irritation to which the bladder is subjected, and the straining attendant on and following the expulsion of the urine, than to any obstruction to its passage. Hence they are more common accompaniments of stone than of stricture. Hence, too, they are most frequently found associated with those calculi which are attended with the greatest amount of suffering, viz., the phosphatic. It is worthy of remark that, in each of the two cases I have related, lithotripsy had been practised. I cannot help feeling it more than probable that the irritation consequent on the process of crushing, and the subsequent passage of calculous fragments, was much concerned in the formation of the sacculi in these cases.

The sacculi are most often found behind the trigone and ureters, between them and the fundus. They may, however, occupy any part of the bladder, and may be quite out of reach in lithotomy. Their walls, consisting only of the mucous membrane, with some cellular tissue, and perhaps a thin layer of muscular fibres, are generally thin—consequently, easily lacerated in an operation: an accident almost sure to be followed by a fatal result. They do not seem liable to be occupied by calculi, unless small ones slip into them from the bladder. When this does happen, the stone becomes the nucleus of a formation, which in time fills up the sacculus, and may, as in the above two cases, project through the orifice of communication into the bladder, when it may increase to any size, thus forming a stone of more or less hour-glass shape.

I know no means, short of exploration of the bladder with the finger, by which it can be made out for certain that a stone is partly or wholly encysted. In Case I, I had no suspicion of such a condition till it was suggested by the appearance of the calculus removed at the third operation. In Case II, my apprehensions were strongly aroused by the stone being found always in the same position, and being apparently fixed there; while the finger in the

rectum discovered, immediately beneath this spot, a lump having more prominence than would be afforded by a stone contained within the bladder. In the last operation performed in Case I, I had been assured of the fact by former experience, and had learnt the position of the stone: I could therefore lay my plans accordingly, and certainly found the recto-urethral incision enabled me to get at the stone better than the lateral operation had done. If the stone had been further removed from the prostate, the only resource would have been the high operation, which, although I had been fortunate enough to have one successful case,* I was unwilling to resort to, so long as there was a prospect of removing the stone by the perineal incisions.

The difficulty of estimating the size and number of calculi through the information afforded by the sound will be acknowledged by all who are in the habit of making the attempt. The information derivable from the patient with reference to the duration of his complaint is also often very fallacious, especially among the poorer classes, who are singularly unobservant or forgetful of their symptoms. A remarkable illustration of this has been furnished during the present year by the case of a man from whom I removed, by the lateral operation, a lithic-acid stone, weighing twenty-one drachms; yet this man would barely confess to any symptoms of more than a month's standing. During that time they had been very severe, and a delicate coating of phosphatic deposit upon the stone indicated that there had been an inflamed condition of the bladder. Doubtless the acute pain of the last month had thrown a veil over the previous sufferings, which, in comparison with it, seemed scarce worth mentioning. In the case of John Ayres, I thought I might rely upon the positive assertions of a moderately intelligent labourer, who had on a former occasion been a sufferer from the complaint: yet there is no question of his being mistaken as to the duration of his symptoms, and of my having been led into the error of attempting lithotripsy by placing too much reliance upon his narrative.

Original Communications.

A CASE OF FRACTURE OF THE BASE OF THE CRANIUM: WITH OBSERVATIONS.

By GEORGE GREAVES, Esq., Manchester.

THE instances of recovery after fracture through the base of the cranium, at present recorded, are not perhaps so numerous as to render superfluous the publication of an additional one. That the following was such a case, little doubt, I presume, can be entertained.

CASE. Mr. J. B., aged 37 years, was thrown out of a low pony gig on the evening of July 23rd, 1844, and alighted on the left side of the head. He was for a short time perfectly insensible, but in about a quarter of an hour consciousness returned.

When I saw him, half an hour after the occurrence, he was very pale, had a cold perspiration, a pulse numbering about 80, and very compressible, the pupils were somewhat dilated, and he was vomiting large quantities of an almost black fluid. Venous blood was flowing in a pretty full stream from the left ear, and there was also bleeding from the nose. I found a puffy swelling about two inches above the left ear, and on removing the hair discovered two distinct contusions, distant about an inch from each other. The cuticle was abraded, but there was no wound of the cutis. There was considerable extravasation of blood under the integuments, but I could detect no evidence of fracture with depression. The palpebræ of the right or opposite eye were of a dark purple colour, evidently from blood effused into the orbit; and there was swelling with

* See Transactions of the Association, vol. xvi.

tenderness, but no discoloration, over the zygomatic process of the right malar bone. While I was examining the head, the patient passed involuntarily an evacuation *per anum*. Although conscious, and recognising those about him, his mind was much confused. He was trying to recollect how the accident had occurred, and to account for the bleeding from the ear, etc.

When he was laid in bed, the pulse became weaker, and at times almost imperceptible. The vomiting continued. I gave a little weak brandy and water. He presently began to talk incoherently, and was so restless as to be with difficulty kept in bed. He appeared to have distressing sensations, which he could not describe, in the left side of the head. No distinct signs of reaction showed themselves during the first five hours. When six hours had elapsed, the vomiting had nearly ceased; he was more tranquil: the skin had recovered its natural temperature, and the pulse had risen to 100, and was tolerably firm. The bleeding from the ear, as well as from the nose, still continued.

I now thought it right to deplete, and took sixteen ounces of blood from the arm. The pulse fell to 80, and my patient became less excited, and his skin was cooler. I prescribed an evaporating lotion to the head, and a dose of calomel and colocynth.

The next morning, I found that my patient had passed a tolerably tranquil night, and had slept a little. He had vomited once or twice, and the bleeding from the ear still continued. The pulse was 88, and quiet; he had passed urine freely, but only one small stool. There was some heat of the scalp, and tenderness in the seat of the contusions. He was perfectly rational, and remembered everything up to the time of the accident, but not the actual fall from the gig. He complained much of the left ear. It was not, he said, actual pain, but a very disagreeable sensation, and a continual sound, such as is caused by hammering a sheet of tinned iron. These sensations were increased by forcibly closing the jaws, and the same action increased the flow of blood from the ear. Straining at stool had the same effects. He complained much of the lightness of his head, especially when he raised it from the pillow. The pupils were natural, and there was no intolerance of light. On this day, the late Mr. W. J. Wilson saw the patient, and continued for some days to attend him conjointly with myself.

Until the fifth day from the receipt of the injury, there was no change in the symptoms, excepting that they gradually became still less strongly marked. The bowels being inactive, it was necessary at intervals to give calomel, followed by sulphate of magnesia and tartar emetic.

On the morning, however, of the fifth day, a new and very serious symptom presented itself. There was decided paralysis of the facial muscles on the left side. It was not visible when the face was at rest, but the attempt to speak made it very evident. He nevertheless articulated perfectly. The tongue, when protruded, did not incline to either side. He was perfectly rational, and had slept well during the previous night. There was no tendency to coma. The noise in the ear was less loud; but there was a general feeling of weight or pressure affecting the whole of the left side of the head. The temperature of the scalp had rather increased. The pupils were natural, and there was no intolerance of light. Pulse 88, and soft. A grain of calomel and half a grain of ipecacuanha were ordered to be taken every four hours.

On the morning of the sixth day the paralysis of the facial muscles had increased, and the patient complained that when he wished to close the eye on the affected side he had to draw down the lid with his fingers.

In the evening of this day, I observed that the tongue, when protruded, was very decidedly turned to the right side. The distortion of the face, when speaking, had increased, and there was some when the features were at rest. The secretion of urine, which had been scanty, had increased, and the bowels were acting very freely.

From this time, under moderately active antiphlogistic treatment, the patient gradually recovered. The only fresh

symptom which appeared, was the change of the discharge from the left ear from blood to a colourless watery fluid. This change was fully established at the end of a week. The watery discharge continued for two or three weeks longer.

It has been mentioned that there was tumefaction with tenderness over the right malar bone. When the effusions had been absorbed, I was able to detect most distinctly a fracture, with some displacement of the zygomatic process of the malar bone.

Some months elapsed before my patient was quite equal to the full discharge of the duties of his profession. The paralysis of the facial muscles continued, although not so strongly marked; and as the noise in the left ear diminished, it was found that the sense of hearing on that side was considerably impaired.

During the eleven years which have elapsed since his recovery from this accident, Mr. B. has enjoyed excellent health, and has experienced no inconvenience, excepting the slight paralysis of the facial muscles and the partial deafness, both of which still continue. He has never also felt quite the same confidence in himself in the public exercise of his profession.

REMARKS. This case presented, I believe, every symptom of fracture through the base of the cranium which can be expected to be met with during life. There were, first, evidences of contusion of the scalp caused by a fall in an almost vertical direction. There were, secondly, the symptoms of concussion of the brain in a strongly marked degree. Then there was the copious venous hæmorrhage from the left ear, succeeded by a serous discharge. The uneasy sensations experienced in the same ear, increased as they were by forcibly closing the jaws, were further corroborative proof of injury to the temporal bone. The considerable bleeding from the nose, although, taken alone, it might have indicated nothing more than the rupture of vessels caused by the concussion, yet, viewed together with the other symptoms, seemed to show that the fissure had extended through the ethmoid bone. The ecchymosis in the orbit on the opposite side of the head appeared to prove that the fissure had extended as far as it could in that direction. The occurrence, after the lapse of several days, of paralysis of the muscles of the face and tongue rendered still more probable the conclusion to which we came as to the nature of the injury received. That conclusion, I need scarcely repeat, was, that there was fracture commencing about the centre of the left parietal bone, passing through the temporal, sphenoidal, and ethmoidal bones, obliquely to the right malar.

The peculiarities of the case were, first, the small amount of mental and corporeal disturbance following so fearful an injury to the coverings of the brain, and, it may perhaps be added, to the brain itself. If the venous hæmorrhage from the ear, diagnostic of fracture through the *basis cranii*, comes from the lateral sinus, there must be more or less laceration of the dura mater. If the serous discharge, unobserved at first, because mingled with the blood, but continuing after that has ceased, be the cerebro-spinal, or subarachnoid fluid, it follows that the arachnoid membrane has been torn. Can we conceive of such mischief to the investments of the brain without some injury to that organ itself, and that, too, in a part where it is most impatient of injury?

The favourable result may be attributed mainly, perhaps, to the good constitution of the patient and his temperate habits. Some credit may also be taken for the treatment; and, in reference to this point, I am happy to have an opportunity of bearing my testimony to the skill and judgment invariably displayed in the medical treatment of surgical injuries by my lamented colleague in the treatment of this case.

The non-appearance of so important a symptom as the paralysis of the facial muscles on the side primarily injured, until the fourth, fifth, or sixth day after the accident, has been observed before; but I am not aware that the delay has been satisfactorily explained. That the

cause was, in this instance, one affecting the *portio dura* after its separation from the *portio mollis*, is proved, probably, by the partial retention of the sense of hearing on the injured side. May we suppose the fissure in the temporal bone to have crossed the aqueduct of Fallopius, and after the lapse of four or five days, some attempt at ossific union to have been set up, which would probably diminish the calibre of the canal at that point to the extent of partially compressing the nerve? That the pressure was caused by a solid deposit, is proved, I think, by the partial persistence of the paralysis up to the present time.

The delay of the paralysis of the muscles of the tongue for thirty-six hours longer, viz., until the evening of the sixth day, was a peculiarity in this case hitherto, I believe, unobserved. I shall not attempt to explain it; but would only remark, that the divergence of the apex of the tongue to the right side made it probable, but by no means certain, that the motor nerves affected were those supplying the right side of the organ.

The fracture of the zygomatic process of the malar bone was another peculiarity of the case. Was it the result of a species of *contre-coup*, or, of what is perhaps almost the same thing, the jar given to the whole cranium by the blow? That it was not caused by direct violence, as *e.g.*, by the cheek coming into contact with any part of the carriage in falling, was proved by the absence of any, even the slightest, external mark of contusion.

The appearance on the injured side of the head of two distinct contused wounds of the scalp, was a point of some interest in a medico-legal sense. Had my patient been driving alone, doubt might have arisen whether the two wounds could have been produced by the fall from the vehicle. They were accounted for by the extreme roughness of the road.

AMPUTATION OF THE FOOT AT THE ANKLE-JOINT, ILLUSTRATED BY A CASE.

By HENRY THOMPSON, M.B., F.R.C.S., Honorary Surgeon to the St. Marylebone Infirmary.

[Read before the Medical Society of London, Feb. 16th, 1856.]

I HAVE selected this subject more for the purpose of bringing before the Medical Society of London a good practical case, than for that of reading a paper upon it at any considerable length, especially as the observation appeared to be one well suited for notice or remark, in conformity with a plan the adoption of which is new to the Society, and the utility of which is now in progress of proof by its Fellows.

This case of amputation at the ankle-joint according to the method first adopted by Mr. Syme, I would gladly have presented to the Society within six weeks of the date of the operation, at which time it was almost as sound, and almost as firm and capable of bearing pressure, as it is at the present moment. Our Society, however, was not then sitting, the last summer recess having commenced. I had, however, the pleasure of showing it to two or three gentlemen, Fellows of our Society, who will, I know, bear testimony to my report respecting it. Moreover, its present condition can be verified, as the patient will be presented for that purpose. Without further preliminary remark, I will briefly detail her history as follows.

CASE. L. O., a girl, aged 10 years, was admitted to the Marylebone Infirmary in April 1855. During the previous four years she had been a patient in the Margate Infirmary, in consequence of indolent glandular swellings and ulcerations in various parts of the body, together with carious disease of the tarsus and metatarsus of the right foot, which had commenced some twelve months before her admission there. She appeared not to have gained much by her long residence at the seaside.

The foot was now considerably swollen, and presented sinuses in various parts, through which it was easy to de-

tect, with a probe, carious bone to a large extent in the tarsal as well as in the metatarsal bones. Her state of health did not appear to be favourable to an operation in the spring; she was therefore watched carefully, her diet regulated, and cod-liver oil administered, until July, when, as she had greatly improved, I decided to remove the foot at the ankle-joint.

July 4th. The operation was performed in the following manner. I entered the bistoury at nearly the posterior margin of the external malleolus, and carried it firmly down to the bone, in a direction somewhat obliquely downwards and backwards beneath the heel, the incision being directed sufficiently far back to fall well behind the larger tubercle on the inferior surface of the os calcis, then upwards to a point situated a little posterior to the centre of the inner malleolus. The point of the knife was then introduced at the commencement of the incision just described, and carried over the dorsum of the foot, to meet the other extremity of that incision at the inner malleolus. The foot being raised so that the plane of the sole was perpendicular, the soft parts were carefully dissected up, so as not to cut or score the flap, by keeping the point of the knife close to the os calcis, and following its contour until the insertion of the tendo Achillis was arrived at. Next, taking the foot into my own hand, and depressing it, I opened the joint, divided the lateral ligaments, and lastly the soft parts, close to the posterior aspect of the astragalus and os calcis, separating from the latter the tendo Achillis, which completed the amputation. A thin slice of bone, including the two malleoli, was sawn from the lower ends of the tibia and fibula; the vessels were tied; the heel flap brought up into accurate approximation with the upper surface, and maintained there by three sutures, a strip or two of plaster, and a light compress.

About the third day after, the dressings were changed in the usual manner. There was no kind of constitutional disturbance. Diet to be nutritive.

July 10th. It was evident that union by the first intention had taken place through a large portion of the wound. The other parts were suppurating healthily.

The healing process went on without a check; and on the 14th of August, less than six weeks from the time of the operation, the wound had firmly cicatrised: there were no sinuses, pain, or even tenderness in the stump.

REMARKS. I have detailed the steps of the operation with somewhat more of minuteness than perhaps some of the Fellows of the Society may deem to have been necessary. I have done so, however, because I am anxious to lay some stress upon two or three points in connexion with the manner of performing this amputation, as I believe its success greatly depends upon attention to them.

Without referring to the records of our journals for the purpose of supporting my assertion, I shall assume that it will be admitted that the operation in question is often followed in our hospitals by a rather long and tedious convalescence: in short, that it has been observed by most of my surgical brethren to be a very uncommon occurrence for the flaps to unite by the first intention; that there are almost invariably at first, non-union, œdema of the lower flap, considerable suppuration; and that not unfrequently a portion of that flap becomes gangrenous, and sloughs.

These unfavourable results are, I believe, mainly attributable to three circumstances—

1. To the division of the posterior tibial artery too high up.
2. To the infliction of injury upon the heel flap, either by the knife or by too forcibly handling it during the operation.
3. To the hollow or cup-shaped form of the heel flap when it is cut unnecessarily large, by carrying the lower incisions too forward on the sole of the foot. With this form of heel flap, it is impossible to obtain union by the first intention.

My remarks upon these points will be exceedingly brief. Respecting the first, or that of the spot at which the tibial artery ought to be cut, the importance of leaving this