pregnancy at the patient's earnest request, there were at least four months of considerable and increasing strain to be borne by the abdominal wall, should the pregnancy not be interrupted. As it is thought by many that division of the muscular branches of the intercostal nerves, unavoidable in the vertical operation, conduces to sequent ventral hernia, it was thought wisest to adopt Morison's incision, which avoids these nerves. The result was all that could have been desired. The calculi were removed; the pregnancy was not interrupted; at term she was delivered of a fine boy without any difficulty, and Mr. H. J. Moon was able to write 16 months afterwards: "As a further proof of her fitness I might mention that on Thursday last she attended a confinement with me and has on several occasions nursed maternity cases for me."

CASE 53. Operation during pregnancy, which was not interrupted, by Morison's method.—The patient, a married woman, aged 33 years, was sent by Mr. Moon of Levenshulme, on June 3rd, 1904. She had had five children with no miscarriages; the youngest child was five years old. At the time of examination she was four and a half months pregnant. For the last two years, up to which time she had always enjoyed good health, she had suffered from attacks of pain, starting beneath the right scapula and passing round to the epigastrium. These had been much worse for the last five months and were increasing in severity and frequency. The pain was ushered in by some vomiting of food, in which lately she had noticed streaks of blood. Each attack was followed by transient jaundice, which disappeared within two days. One calculus had already been found in the fæces. The bowels were regular and she had not noted any marked change in the colour of the stools. The urine was always high coloured after the pain. All her confinements had been severe, requiring chloroform. She dreaded intensely the possible combination of one of these attacks with the expected labour. There had been no loss of flesh. Both Robson's and Murphy's tests gave a positive result. She was admitted to Ancoats Hospital on June 8th. On the 12th and 13th there were severe pain and vomiting. On the 16th operation was performed. Morison's lateral incision was used. The gall-bladder was distended and contained a great number of small round calculi like fig seeds. All were removed and a tube was tied in, secured by catgut purse-string and fixation suture. The rest of the wound was closed by tier suture. The drain tube came away on the 25th (the ninth day). Bile continued to flow until July 1st (the fourteenth day), and on July 7th she was discharged well; her pregnancy was uninterrupted. She was safely delivered of a fine boy at the normal period. The abdominal wound had perfectly healed.

The last case illustrates the Mayo Robson method of incision. This was chosen because it seemed probable that liver rotation as he advises might be carried out with advantage and this can be done better, so far as I can judge, through the vertical than through the horizontal incision; this, indeed, proved to be the case. The final results do not seem to differ very much but there is one condition in which the Morison incision has decided advantages. This is in any case in which pericystic suppuration is suspected. The pus runs easily out of the abdomen when once the adhesions around are separated and does not tend in any way to infect the essentially dangerous region—that of the small intestine. A few weeks ago I operated upon a woman in this way whose gall-bladder contained an ulcer through which a stone had passed and an abscess had formed around it. When the adhesion which existed between the duodenum and the liver was separated about an ounce of foul pus escaped. It ran easily out and on to the sponges previously placed. No peritonitis followed and the patient perfectly recovered. In all such cases Morison's incision offers immense advantages. In ordinary cases, however, I rather prefer Mayo Robson's. The following is an example of his method and the last case I propose to detail.

CASE 55. Case illustrating the later methods of operation; curious abnormality of arms; Mayo Robson's method; value of Murphy's test—The patient, a man, aged 50 years, was sent by Dr. W. Buck of Beswick in October, 1905. In 1898 he first noticed pain in the right hypochondrium. This attack lasted for two days. In this and some of the succeeding earlier attacks there was no vomiting but slight jaundice; indeed, although he had had six or seven attacks vomiting was only noticed once. The pain, which was paroxysmal, was always present. Beginning in front, it rapidly passed through to the back and up to both shoulders. Tingling and

numbness followed in both arms and both hands. In the back it was felt below both shoulder-blades. There had been no loss of flesh. The fæces always lost colour, though the amount of loss varied in different attacks, and the urine had been high coloured. The health had been perfectly good between the attacks. He had consulted several physicians whose diagnosis had greatly varied. Dr. Buck, however, always believed that biliary calculi were the cause. The patient had a curious condition of the left arm which was congenital. Pronation of the forearm was impossible. The range of movement from supination, which was complete, was only 90°, or a right angle midway between the two. This abnormality occurred in every other child of his father. In his eldest brother it was double; neither arm could be completely pronated. The liver edge was not thickened or nodular; it projected two inches below that of the ribs. No enlargement of the gall-bladder could be felt but there was some increased resistance over the upper half of the right rectus. There was no pain on direct pressure downwards (Robson's point). Murphy's test gave a positive result. On Oct. 6th, with Mayo Robson's incision, the abdomen was opened and the gall-bladder was isolated and packed around with sponges. The gall-bladder was opened and bile escaped; 30 faceted stones were removed mainly by the scoop aided by pressure from without. One stone in the common duct was in this way coaxed up into the gall-bladder and removed. When all was clear a rubber drainage-tube was tied in by a catgut purse-string suture and a catgut fixation suture and gauze were placed around it. The abdominal wall was then closed, also with catgut in tiers. Bile passed freely through the tube, which came away on the thirteenth day. On the fifteenth the gauze was also loosened and removed, but threads of this continued to be extruded until the twenty-fifth day. The patient made a steady and pretty rapid recovery. Bile stained the dressings until the twenty-fifth day. For the first week he complained of slight stinging pains in the affected region but these soon disappeared and did not recur.

The cases that I have detailed will, I think, not only illustrate many of the difficulties of diagnosis encountered in actual practice and the means which at the present time are most useful in differentiation, but also many of the improvements in the technique of operation which have so largely increased the safety with which such operations can now be carried out.

Manchester.

A CASE OF POST-TRAUMATIC HÆMORRHAGE FROM THE SUPERIOR LONGITUDINAL SINUS WITHOUT FRACTURE OF THE SKULL; OPERATION AND RECOVERY.¹

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On April 1st, 1905, a young man, 25 years of age, slipped and fell on the back of his head, inflicting a small scalp wound which was dressed a few days later in the casualty room of the Royal Free Hospital. On the 14th he came to the hospital again, complaining of constant and increasing headache since the accident, and was seen as a medical out-patient. The scalp wound was clean and perfectly healed and palpation of the skull revealed no lump, depression, or other abnormality. The headache was general, not limited to one side or any particular locality, and was not associated with any cranial tenderness. Examination of the function of the cranial nerves failed to show any alteration from the normal; the pupils were equal and active;

¹ A paper read before the Clinical Society of London on March 5th, 1906.

there was no ocular palsy, nystagmus, hemianopsia, or optic neuritis. The power in all the limbs was unimpaired and coördination was well preserved. No disorder of sensation could be elicited anywhere on testing. It was noted, however, that the abdominal reflex on the left side was absent, that the left knee-jerk was more brisk than the right, and that an extensor response was obtained on stimulating the sole of the left foot. A tentative diagnosis of intracranial abscess was made and the patient was recommended for admission into the hospital. He did not come into the hospital until two days later and in the meanwhile he had experienced several attacks of vomiting and had noticed some paresis of the left hand and the left leg.

On admission his state had altered considerably. He was rather drowsy but could be roused; his breath was offensive and his tongue was furred; his pulse varied between 60 and 70 and his temperature was generally subnormal. The headache was very intense, radiating from the back of the head and spreading over the vertex, more especially on the right side. Vomiting of the cerebral type took place at intervals. The urine was alkaline and gave a heavy deposit of phosphates but contained no albumin. There was now distinct hemiplegia involving the lower half of the left side of the face, the left arm, and the left leg. Sensation was impaired over the left forearm and fingers and over the lower part of the left leg. An exaggerated knee-jerk, ankle clonus, and extensor plantar response were obtained on the left side and the left abdominal reflex could not be elicited. There was no optic neuritis. On the 18th the patient was much more drowsy and examination revealed left hemiplegia, hemianæsthesia, and hemianopsia. Still there was no optic neuritis.

An exploratory operation was decided upon and was undertaken at 6.30 P.M. After the scalp had been shaved and cleansed the upper end of the fissure of Rolando was marked by a small nick in the skin at a point half an inch behind the centre of a line joining the glabella with the external occipital protuberance. A large flap of scalp was turned down and the greater part of the bone covering the parietal lobe was exposed. A trephine opening one inch in diameter was made at a spot about one and a half inches below the mid-line and an inch behind the fissure of Rolando and this opening was enlarged with Hoffmann's forceps. The skull was at least a third of an inch in thickness and was very tough. The bulging dura mater was of a dark purplish colour which was found by incision to be due to a large mass of blood clot lying on its internal surface. A considerable part of this clot was brownish in hue and gave evidence of having been present for at any rate some days. With the possibility of the source of the hæmorrhage being the middle meningeal artery in view, the opening in the skull was enlarged in a downward and forward direction but during a pause in this undertaking the clot was removed from beneath the dura mater with a finger. Contrary to expectation, the fresh hæmorrhage which ensued came from the direction of the superior longitudinal fissure. The skull opening was accordingly enlarged upwards until the superior longitudinal sinus was exposed and found to be bleeding freely into the subdural cavity. The dura mater having been split up to the bleeding point four pairs of Spencer Wells forceps were applied and gauze was packed round them. The latter manipulations were necessarily hurried owing to the condition of the patient's pulse which had become increasingly rapid and feeble with the severe and continuous hæmorrhage. For the same reason no exact view could be obtained of the bleeding point, hence the necessity for several forceps and for leaving them *in situ*. While the dura mater and the scalp were being stitched an assistant infused three pints of warm saline solution containing a drachm of brandy into the right median basilic vein. On the following morning the patient was conscious but he complained of considerable pain. The hemiplegia, hemianæsthesia, and hemianopsia were still marked and conjugate deviation of the eyes to the left was impaired. The pulse was 88 and the temperature between 99° and 100° F.

On the 20th the forceps and plugging were removed without any recurrence of hæmorrhage. No improvement had taken place in the condition of the left limbs and it was noticed that the patient had complete loss of sense of position of them. On the 22nd improvement in the hemiplegic and hemianæsthetic condition was noted and this steadily progressed. 14 days after the operation the patient was allowed to get up and a fortnight later he was sent to a convalescent home still exhibiting slight weakness and clumsiness in the

left arm and hand. Since that time all has gone well and his recovery has been complete.

The case is one of considerable interest for several reasons.

1. The occurrence of hæmorrhage from the superior longitudinal sinus without fracture of the skull may be attributed to the tearing away of a tributary vein from its junction with the sinus at the time of the accident. The unusual thickness of the skull was probably a causative factor by reason of its deficient elasticity.
2. The slow development of the symptoms may be explained by the fact that the hæmorrhage was a venous one, taking place from a small point and against the normal intracranial pressure until the skull was opened at the time of operation, when the bleeding rapidly assumed alarming proportions.
3. The long period, four days, which elapsed between the operation and the improvement in the hemiplegic state was probably due partly to the interference in the functions of the cortex caused by the preceding compression and partly to an extensive cedema of the brain substance, resulting from the relief of pressure and from the extremely anæmic condition of the patient.
4. The diagnosis of cerebral abscess was one which appeared to be best justified and one which would probably be made in any similar case in spite of the fact that optic neuritis was not present. A gradually progressive hemiplegia associated with hemianæsthesia and hemianopsia and unaccompanied by anything in the nature of convulsions pointed strongly to the presence of a deep abscess exerting pressure upon the optic radiations and internal capsule. The absence of convulsions must be attributed to the very slow accumulation of blood upon the surface of the brain in contrast to the more rapid hæmorrhage which obtains in cases of arterial rupture.
5. Lastly, the importance of a careful examination of the nervous system in a patient complaining of nothing but a headache following a slight injury to the head and the absolute reliance which can be placed upon the discovery of an extensor plantar response and of the absence of the abdominal reflex on one side as evidence of an organic lesion, are well emphasised in the history of this patient.

Although we have searched the medical and surgical literature of the subject we have been unsuccessful in tracing any similar case of hæmorrhage from the superior longitudinal sinus without fracture of the skull.

NOTES OF A

FATAL CASE OF SEPTIC THROMBOSIS OF THE LATERAL SINUS, SECONDARY TO CHRONIC OTITIS MEDIA PURULENTA IN THE LEFT EAR, AND COMPLICATED WITH SEPTIC INFARCTIONS IN THE RIGHT LUNG.

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THE patient, a little girl, aged seven years, was admitted to the Glasgow Ear, Nose, and Throat Hospital on Sept. 20th, 1905. She had had a continuous discharge from the left ear for a year, which seemed to have originated in an attack of whooping-cough. 15 days before admission she complained for one day of a pain in her left ear. Four days afterwards (11 days before admission) she had a severe rigor lasting about half an hour. This was followed by a similar rigor on the following day, and, up to her admission, she had a dozen severe rigors, two of them occurring on the morning of the day of admission. According to the report of the family medical attendant her temperature during four or five days prior to admission had varied from normal to 104° F., while for two days there had been frontal headache and a week before admission she complained of pain in the left side of the neck. At the beginning of the acute illness she vomited once or twice but not since. She had been rapidly emaciating, with profuse perspiration, and for two or three days there had been a troublesome cough. There was no history of convulsions