

complained much of thirst. The pulse was 90 per minute, of good volume and tension. The respirations were 18 and the temperature was 100° F. On the 30th the patient was fairly well, having slept fully nine hours. There was no stain on the dressings. The temperature was 101°, the pulse was 96, and the respirations were 24. On the next day (Dec. 31st) the wound was dressed and the drainage-tube was removed, some sterilised gauze being inserted in its place. Examination of the chest showed the presence of pneumothorax with considerable displacement of thoracic viscera; the apex impulse was half an inch to the right of the sternum and the whole left side of the chest was hyper-resonant. On Jan. 2nd, 1906, the patient was not so well, the temperature registering 100·5°, the respirations numbering 30, and the pulse being 120, but it was found that he had been taking oranges and he complained of pain in the epigastrium. He was given castor oil and on the following day he felt much better. He complained of palpitation and some friction was heard in the region of the wound. For the next few days the patient rapidly improved, the temperature fell to normal, the breath sounds became audible over the lower part of the left chest, and the apex gradually resumed its normal position. Breathing exercises were given by means of a Wolff's bottle. The wound was quite healed on Jan. 13th, a fortnight after the operation, no pus being present from first to last. The patient went out against directions and got a chill which kept him in bed for a few days, but he was practically well at the end of January and able to undertake a journey from Glasgow to Portsmouth, subsequent reports of his condition being satisfactory. At the time that he left the measurements of the chest showed a difference of three-quarters of an inch between the right and left sides at the level of the sixth rib. The temperature was normal and the respirations numbered 18. The patient felt no pain. The breath sounds were heard all over the chest on the left side but were, if anything, somewhat fainter than on the right side.

One or two points in connexion with this case are worthy of note and are, in our opinion, of sufficient interest to warrant the case being recorded. The rarity of the injury and the fact that hæmorrhage took place into the pleural cavity without any pneumothorax being present till after the chest had been opened into surgically are important features. There was undoubtedly an opening in the parietal pleura from the first produced by a pointed fragment of glass, but the wound passed in such a direction—i.e., piercing first the external intercostal muscle, then between the muscles, and then passing through the internal muscle about one inch farther back—that the overlapping tissues evidently acted like a valve and prevented the entrance of air, as they also did the exit of blood in an outward direction from the divided artery. Fortunately for the patient, although the operation was performed at his home, the aseptic precautions proved effectual and no pus was seen. Had empyema developed his chances of recovery would have been remote considering his general condition from loss of blood and shock. During the first two or three days after the operation the patient's danger appeared to arise mainly from a tendency to syncope due to the displacement and consequent embarrassment of the heart. When absorption of the air began he rapidly improved.

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## TWO CASES OF HEPATIC ABSCESS TREATED BY THE TRANS- PLEURAL OPERATION.

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I HAVE ventured to publish these two cases because they would seem to belong to that category in which Jacobson<sup>1</sup> includes "those grave and difficult cases where a hydatid cyst or hepatic abscess instead of making its way towards the abdominal wall works upwards, thrusting up the base of the lung" and so have to be approached by a transthoracic incision.

CASE 1.—A man, aged 21 years, of the 4th Battalion Manchester Regiment, was transferred from Northampton to Colchester Station Hospital for the purpose of being

invalided from the service. He was, however, admitted to my wards for observation, the history of the case being that he had suffered from dysentery with an "enlarged liver" while in Ladysmith during the siege. His face was sallow and his features were somewhat "drawn" and he had a moderate diarrhœa with dark-coloured offensive pultaceous stools but with no pus or blood. There was no definite swelling to be defined, but there was a sensation of increased resistance on palpation below the costal margin and some dulness at the base of the right lung. There was no history of syphilis or malaria, the spleen could not be felt, and there were no rigors or sweatings. As there was no urgency in his symptoms and as the liver had been explored with a negative result before his transfer to Colchester, it was decided after a consultation to await more definite indications for treatment. The diarrhœa was easily controlled by a little opium, salol, and bismuth and the patient's temperature rose to 100° F. on two occasions only. On Oct. 29th, some three weeks after admission, however, the man complained of considerable pain and his temperature was found to be 102°. On the next morning, therefore, after preparations had been made for operation if necessary, the liver was again explored and after two or three attempts a cavity containing typical liver pus was entered at a depth of some three inches, the needle being between the eighth and ninth ribs, approximating to the post-axillary line. The abscess appeared to be one of those which instead of working downwards and outwards to the parietes was extending upwards and backwards to the hinder part of the liver. I therefore determined to adopt the transthoracic route in preference to the ordinary subcostal transperitoneal or subpleural intercostal incisions. The needle being left in as a guide and chloroform having been administered, an incision some three or four inches long was made over the ninth rib and about two and a half inches of it were excised, the pleura and diaphragm were cut through, and the liver was exposed. A strong suture was passed deeply through the liver substance and through the diaphragm and integuments at each end of the incision, thus anchoring the viscus securely to the wound, and the pleural cavity was then sutured off as quickly as possible. Very shallow and interrupted respiration supervened on the admission of air to the pleural sac and the patient became very cyanotic, but he rapidly recovered as soon as the cavity was securely sealed. The liver and the edges of the diaphragm were fixed by some further sutures to the deeper layers of the wound, a dressing was applied, and the patient was sent back to the ward, as it was decided to wait for a day or two to allow adhesions to form before proceeding to open the abscess. This was done on the third day after the operation and about two and a half pints of chocolate-coloured pus having been evacuated the cavity was gently syringed out with iodine water. The discharge gradually ceased and on Dec. 7th the cavity had so contracted down that a tube barely one and a half inches long was with difficulty retained in the wound. On the morning of Dec. 8th the temperature, hitherto normal since the opening of the abscess, was found to be 99·6°. While the wound was being gently syringed out with 1 in 40 carbolic lotion the patient suddenly complained of great pain in the epigastrium, became pallid, broke out into a profuse perspiration, and vomited. I was considerably alarmed, fearing that the syringing—gentle as it had been—had broken through some attenuated portion of the wall of the abscess cavity and possibly infected the peritoneum. A quarter of a grain of morphine was injected and by the evening the pain had abated and the vomiting had ceased, but the abdomen, though soft and moving easily on respiration, was somewhat distended. The temperature continued to fluctuate between 99° and 102° and a suspicion arose that there was a collection of pus in front, either intra-hepatic or between the liver and the parietes, and on the 22nd a definite area of dulness being defined an incision was made just below the costal margin and a pint of creamy inodorous pus was evacuated. The temperature fell to normal that evening and the patient made a good and uninterrupted recovery.

CASE 2.—A man belonging to the 5th Royal Irish Lancers was admitted to one of the medical wards in Colchester Hospital on Oct. 7th, 1902. He had had dysentery at Ladysmith and had been operated on at Nauwport for abscess of the liver and a quart of pus was evacuated. He was invalided home and was subsequently admitted to hospital on the above date. He had suffered more or less continuously

<sup>1</sup> Jacobson: Operations of Surgery, vol. ii., p. 351.

from diarrhoea for 12 months and on admission his urine was found to contain an appreciable amount of albumin. From the notes of his case it would appear that after a rigor his temperature had risen to 103° F., falling to 100° after a profuse sweating. It had then remained normal for a few days but a repetition of the rigors and sweatings had occurred. A consultation was held and the man was transferred to my wards for operation. Next day an exploring syringe was inserted in practically the same position as in the former case and pus having been found a method similar to the previous one was pursued. On exposing the surface of the liver a thin flaky pus was seen welling up from around the needle which had been left *in situ*; the wound was packed with gauze whilst the pleural sac was sutured off and the liver was fixed to the deeper planes of the wound. On opening the abscess, which was done immediately, not more than one and a half ounces of unhealthy-looking pus escaped. The temperature after the first three days fell to normal and remained so throughout his convalescence, which was uneventful. He was discharged to a sick furlough looking in good health but still with a small amount of albumin in the urine.

In the first operation when the pleural sac was opened the patient's condition from threatened respiratory failure became alarming from the action of the left lung being impeded by the pressure of the pillow beneath the chest and by the pressure of the abscess and from the presence of air in the right pleural cavity. He was turned over on his back so far as was consistent with the continuation of the operation and as soon as the cavity was shut off the breathing became normal. It is difficult for me—even if the second abscess was in existence at the time of the first operation and was overlooked, though the character of the pus it contained is against the view that it was of the same nature as that of the larger collection—to account for the disconcerting symptoms which intervened so suddenly while gently syringing the wound and partially obliterated sinus. Though it has been urged that liver pus is sterile, the entrance into the peritoneal cavity of carbolic lotion and abscess debris must have inevitably produced a more or less limited peritonitis, but the symptoms of peritonism readily disappeared under treatment with enemata and sulphate of sodium. Some small perforation may have taken place on the anterior surface of the liver, resulting in a localised abscess limited by adhesions. In the second case the numerous rigors, the high temperature, the profuse sweats, and the small size of the abscess and the character of the pus seemed to suggest a possible pyæmic origin, but the wound healed rapidly and there was no interruption of the apyrexia throughout the recovery.

Limited as my experience is in the operative treatment of hepatic abscess, I submit with all deference the opinion that it is not always advisable to rely on the use of any of the various special instruments—trocars and so forth—to the exclusion of ordinary surgical procedures, for frequently those cases in which efforts have been made for their treatment by the use of such specially devised apparatus have eventually to be submitted to an excision of a portion of a rib to insure efficient drainage. In the second case in which though the abscess was close to the surface of the liver there were no diaphragmatic adhesions and in which there was unhealthy pus welling up copiously around the needle, nothing but disaster, I think, must have followed the use alone of any form of trocar and cannula. And I venture to think that such stabs in the dark, or at least into an obscurity, are out of place in those cases which, unless there are extensive and firm adhesions present, a condition of which we can never feel assured without an incision, can only be satisfactorily grappled with by one of the accepted surgical methods.

My thanks are due to Major W. G. Beyts, R.A.M.C., Civil Surgeon W. Rice, and the late Civil Surgeon J. J. O'Halloran for their valuable assistance in these two cases.

## ENDEMIC HÆMATURIA.<sup>1</sup>

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THE following notes, founded on 65 cases of endemic hæmaturia which occurred amongst the troops in South Africa in 1902, are brought to notice for two reasons: (1) they throw some light on the incubation period of the disease; and (2) because a new line of treatment is suggested which offers some hope of a definite cure. Endemic hæmaturia has been observed for many years; both its frequency and the occurrence of vesical calculi were remarked on by the French surgeons during the invasion of Egypt by Napoleon, but it was not until 1851 that Bilharz discovered the bilharzia hæmatobia in Cairo. Since then it has been observed over practically the whole of the African continent, to which, with the exception of the Mauritius, it was thought to be confined; but lately cases have been reported from Arabia, Cyprus, Antigua (W.I.), India, and even in England, which would point to its having a wide geographical distribution; in Egypt it is a common disease and a fruitful cause of urinary calculi. In South Africa I have collected information which points to its being widely distributed, and cases have been traced to the Vaal, Orange, and Apis rivers, Pretoria, M'Nkandu, Newcastle, the Mooi and Klip rivers, Umzindin and Maritzburg, and streams at Middleburg, Cape Colony, and in the Transvaal, whilst in the Rustenburg valley it is truly endemic.

The bilharzia hæmatobia is a trematode worm in which the male and female reproductive organs occur in separate individuals. The male worm is of a whitish colour and measures about 16 millimetres in length; the female is about 20 millimetres long and lies in the gynæcophoric canal of the male with her ends protruding; the eggs, which it is stated can be distinguished in the uterus, appear in the patient's urine as bright, translucent oval bodies, with a smooth surface and a thin non-operculated shell, possessing a spine situated at one end. It is stated in the text-books that this spine is sometimes situated laterally, this being especially the case when the disease involves the rectum, and the ingenious idea has been advanced that this is due to the greater pressure exercised by the fæces as compared with the urine, but in the many fresh specimens I have examined I have failed to find an ovum with a spine situated laterally.

According to Professor Looss the lateral spine is caused by the egg not being able to take up its normal position in the oötype but whilst, as mentioned before, I have never discovered this lateral placement in fresh specimens, in those which have been mounted a shrinkage may ensue giving a false impression as to the true position of the spine. The ovum contains a ciliated embryo which can be hatched out by mixing some of the urine containing it with water, when it soon acquires a rapid movement, often changing its form. Should the embryos become hatched out in the urine they quickly die and even in water they quickly disappear; the longest period that they have been kept alive is about 36 hours. Sonsino, however, states that they penetrate the body of some species of mollusc which, becoming transformed into a nurse (or redia), produces in its interior a generation of larvæ which in their turn escape and enter the body of the definite host to become mature worms.

I have endeavoured to repeat the observations of Sonsino, but so far without success, and this portion of its life-history cannot be definitely settled; it seems more likely that the embryo itself enters the human host, there to develop into the young worm. That it gains access to its human host or to the monkey, in which it has been found, by means of drinking water is, I think, borne out by the following facts. 1. An epidemic occurred amongst the men of the 8th Hussars stationed at Pretoria in 1902. The camp was situated on the hills to the north-west of the town and it was the custom of the men to bathe in the spruit (Skinner's spruit) which ran along the bottom of the camp. 43 cases occurred and in all a history of having either drunk the water or bathed in the spruit was obtained. 2. Whilst monkeys undoubtedly drink, it is improbable that they ever bathe.

**A RUSSIAN PIONEER INSTITUTION FOR DEAF-MUTES.**—At the beginning of January, 1907, says the *Novoe Vremya*, it is proposed to call a pan-Russian congress of teachers and caretakers of deaf-mute children in commemoration of the introduction into Russia of the education of deaf-mutes for the first time, in the experimental school for deaf-mutes in Pavlovsk, founded 100 years ago by the Empress Marie Theodorovna.

<sup>1</sup> Summary of a paper read before the Transvaal Medical Society, Johannesburg.