of broth. (c) 10 to 15 c.cm. of blood were poured into flasks containing 100 c.cm. of bouillon with 1 per cent. saponin. This method had to be given up owing to the difficulty of excluding air organisms. (d) Blood was poured directly on to the surface of agar plates incubated at 37° C., and also at room temperature. (e) 2 c.cm. of blood were put into a sterile test tube, incubated for twenty minutes at 37° C., and then at room temperature for one hour. The serum was pipetted off, and 10 c.cm. of broth were added to the tube containing the clot. The tube was replaced in the incubator at 37° C. Other media employed were: 1 per cent. saponin broth, 1 per cent. sodium taurocholate broth, 1 per cent. sodium glycocholate broth, 1 per cent. sodium citrate, 0.9 per cent. saline, and media containing adsorbents—aluminium hydroxide, animal charcoal, iron hydroxide. Anaërobic methods were also employed. The cultures were kept for ten days or a fortnight and frequently subcultured.

In all, 96 observations were made on 43 cases. In no instance was any organism grown, except in the few cases which became contaminated by organisms from the air when the flask method was used.

Since the patients were of the same clinical type we may collate the findings in the two series. In the second series, when the methods of sterilization were controlled, the results were consistently negative; it may therefore be assumed that the positive results obtained in the first series were due to contamination. Using the methods of cultivation in general vogue we have failed to demonstrate the presence of bacteraemia in cases of "irritable heart," and must therefore conclude that bacteraemia does not play a demonstrable part in the pathology of this disease.

We wish to express our thanks to Captain H. S. Blackmore, R.A.M.C., for the help he gave in carrying out the first part of the investigations at University College Hospital.

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TRAUMATIC RUPTURE OF THE SPLEEN.

BY

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TRAUMATIC rupture of the spleen is rare in this country. The two following cases, which occurred within seven months, are worthy of record:

CASE I.

W. T., male, aged 24, had been acting as a dispatch rider in Egypt, where he had attacks of malarial fever.

On December 18th, 1915, at 1.30 p.m., he was riding his motor bicycle, when he collided with another. The impact was sufficient to throw him forward thirty yards. He was stunned, and, when picked up, was taken home and attended by Dr. Griffiths at 2 p.m. I saw him at 9 p.m. He was blanched; the pulse was 128; the abdomen was distended and immobile and dull in the flanks.

At 9.30 p.m., under a general anaesthetic, an incision was made through the left rectus. Five pints of bright blood and some clots were removed from the peritoneal cavity. The spleen was enlarged to three or four times its natural size and an irregular laceration could be felt on its upper surface. At this juncture the patient became so collapsed that it was impossible to entertain the removal of the spleen. Gauze was packed into the laceration, the lower portion of the wound was closed, and the patient returned to bed.

He rallied during the night. There was no further haemorrhage. He was given calcium chloride gr. xv every four hours. He remained much in the same condition until December 23rd, when he gradually sank and died, five days after the accident.

CASE II.

J. M., male, aged 14, working on a farm, on July 15th, 1916, at 9.30 p.m., was running down a bank, when he caught his foot in some fern roots and fell on an ant-hill. He states that he hurt himself so much that he lay there for half an hour before he was able to get up and walk home, a distance of only fifty yards. The pain was in his left testicle and there was a swelling on the left side of the scrotum. He vomited three times after he reached home. His mother put some fomentations on him. The next morning he was seen by Dr. Deacon, who ordered him into the Kidderminster Infirmary.

He arrived at 2 p.m.; he had been driven fifteen miles in a two-wheel trap and was sitting up by the driver and appeared to be well. He got down and walked to the ward. He was said to be suffering from a hernia. I saw him at 3 p.m. He did not appear to be ill; the temperature was 97° and the pulse 106. There was no swelling in the scrotum, but when he coughed there was a protrusion from the abdomen into the scrotum, which was easily returned. It felt like a portion of omentum

with some fluid. He denied any sign of a hernia previously. The abdomen was not distended, the movements were free, and there was no rigidity. There was some dullness in both flanks.

At 3.30 p.m., under a general anaesthetic, an incision was made for radical cure of left inguinal hernia. The sac was isolated; before applying the ligature it was opened, when a quantity of blood poured out; the operation for radical cure was completed. The abdomen was opened by an incision through the left rectus. About two pints of blood and clots were removed from the peritoneal cavity. The spleen was felt to be lacerated. It was lifted out and the pedicle tied. The cavity was sponged out and the wound closed in layers. The spleen weighed seven and a half ounces, and was lacerated in four places.

The patient bore the operation well. He gradually improved and the wounds healed. He had an attack of acute parotitis at the end of August, which delayed his recovery, but he was discharged on October 5th. He looked well, and did not appear to suffer any ill effect from the loss of the spleen. He is now at work again and enjoying his usual health.

The contrast between these cases is interesting. The first patient had an enlarged spleen, which predisposes to rupture. The violent nature of the accident was sufficient to make us suspect a serious injury. Although the operation was performed eight hours afterwards, the loss of blood was so great that the patient was unable to recover from it. This result was favoured by the concussion, which prevented a sufficiently early recognition of the abdominal condition. Although it was not possible to remove the spleen this did not affect the result, as there was no further haemorrhage. In the second case the spleen was of normal size, and there was no predisposing cause of rupture. The accident was not severe, and did not make us suspect a serious injury. Although the operation was not performed until eighteen hours afterwards, the loss of blood, though serious, was not sufficient to prevent recovery. If the hernial sac had not been opened the condition might not have been discovered, as it was obscured by the sudden appearance of a hernia and by the moderate nature of the constitutional symptoms. It is difficult to believe that a boy could sit up in a shaking trap and drive fifteen miles over a very hilly road with such severe injuries.

A CASE OF "SPONTANEOUS" RUPTURE OF THE SPLEEN: SPLENECTOMY: RECOVERY.

BY

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THE case is published for two reasons, first, on account of the rarity of rupture of the spleen as an abdominal catastrophe in this part of the world, and secondly, so that medical officers may be reminded of the necessity of examining the spleen in cases who have served for a period abroad.

I am indebted to Lieut.-Colonel Hayes, R.A.M.C., for his permission to publish the notes on this case.

Pte. P., aged 26 (service seven and a half years), was admitted to No. — General Hospital on March 29th, 1917.

He complained of acute abdominal pain and was cold, collapsed, somewhat cyanosed, and without any perceptible radial pulse. The abdomen was not rigid. There was dullness in the left flank. The liver dullness was present and normal. The patient had an "appendix" scar in the right iliac fossa. A lung lesion and locomotor ataxia having been excluded the case seemed clearly an acute abdomen, though its nature was doubtful. Marked cyanosis of the finger-nails was noted, and Colonel Hayes suggested the spleen as the focus of mischief, when the patient remarked "that some had said malaria was his trouble."

Operation.

Immediate middle-line laparotomy was performed. Captain Frew, R.A.M.C., gave the anaesthetic, and Captain F. T. Hill, M.C., R.A.M.C., assisted. On opening the peritoneum free blood was at once found. The wound was enlarged, and a very big spleen was quickly delivered through it. The capsule of the spleen was torn, and the torn surface was covered with firm clot. The pedicle was clamped and the spleen removed; the vessels were secured with a Staffordshire knot. Nearly two pints of blood were then wiped out of the pelvis and the kidney pouches; when the peritoneum was clean, the abdomen was closed with through-and-through silk-worm-gut stitches. Salines, morphine, and stimulants aided the rallying of the patient. His wound healed well, and surgically he made a good recovery.

The blood examination showed the parasite of malaria present in very great numbers. No crescents were found, and,