Clinical Notes

I have been unable to find any information as to how often emboli occur after this operation, but it must be very rare. The case, however, shows the advisability of keeping the splints on till the patient is allowed up at the third week, when every precaution to prevent such an unfortunate occurrence will have been taken.

A CASE OF ABSENCE OF THE LIVER, COMPANIED BY A BILIARY FISTULA AFTER OPERATION.

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At Kassala, Private N. S., a soldier of the 11th Sudanese Battalion, was admitted to hospital on October 3rd, 1903, suffering from fever. In addition to the malaise caused by the fever, he also complained of a feeling of discomfort in his right side. On examination, both liver and spleen were found to be considerably enlarged, but neither organ was sensitive to pressure, and the enlargement of the liver was uniform. He positively denied ever having had dysentery, and his medical history sheet supported this statement, so far as his military service was concerned, a period of four years. His medical history sheet recorded two admissions for intermittent fever. The blood was examined microscopically and the small ringed form of parasites were discovered. The presence of these malarial parasites, and the fact that the man's liver and spleen were both enlarged, the former organ uniformly, made it probable that the man was suffering from double malignant tertian fever, complicated by enlargement of the liver and spleen. This fever is much the most common type of malaria met with in the Kassala province. I may also remark here that enlargement of the liver is common among the Sudanese, probably as a result of their habit of drinking large quantities of marissa, a native beer made from fermented dhurra, and also as a result of chronic malarial poisoning. The patient was put on the usual treatment for malarial fever, a calomel purge, and quin. sulph., grs. x., three times a day. Under this treatment the man's condition steadily improved, and the temperature on the evening of October 11th fell to normal; but he still, however, admitted a feeling of fulness in his right side on questioning. On October 13th his quinine was limited to one dose of grs. x., in the early morning, and an arsenic and iron tonic was ordered for him, it being anticipated that he would be discharged from hospital in a few days. On the evening of October 17th he complained of very great pain in his right side, and his temperature rose to 101·5° F. Examination showed some tenderness of the liver, but nothing in the way of any localised enlargement, and he stated that the pain had come on quite suddenly during the afternoon of the same day; he volunteered no statement of any pain in his right shoulder. The next morning his temperature was still
raised, and his conjunctivae had a slight icteric tinge; the gall-bladder was
not palpable. The patient was anaesthetised, and the liver explored with
an aspirating needle, with the result that on the third puncture a deep-
seated abscess was discovered in the right lobe, the needle having been
inserted through the seventh intercostal space in the mid-axillary line and
directed inwards and upwards. An incision was then made over his eighth
rib, about one and a half inches behind the mid-axillary line. About one
inch of rib was excised, and the abscess opened by means of an incision
into the liver substance, the abscess cavity having first been again demon-
strated with the aspirating needle, and the needle used as a guide. The
pus was found to be very deep-seated, about two and a half inches from
the liver surface, and in quantity amounted to about two ounces. A large rubber drainage tube was inserted into the abscess cavity and the
wound dressed aseptically in the usual manner. The patient experienced
great relief as the result of the operation, and two days afterwards said he
was quite free from pain. The temperature, however, still continued, and
although the blood was repeatedly examined during the next few days, no
parasites were discovered in the corpuscles, and as a consequence no
quinine was given. The wound was dressed twice a day, and after three
days' time little or no pus was discharged into the dressings, the wound
remaining perfectly aseptic. The slight degree of jaundice from which
the patient was suffering immediately before the operation still continued,
but the stools showed bile colouration, proving thereby that there was
no complete obstruction of the hepatic duct.

On the morning of October 24th the patient again complained of great
pain in the liver; the jaundice, from which he was at the time only
slightly suffering, greatly deepened, and by the morning of the next day
his pulse-rate had fallen to 60, with the temperature 102° F., and his urine
showed distinct bile colouring. I was of the opinion that the symptoms
were caused by another abscess, and made preparations for attempting to
discover and open it the next day if possible. On the following morning,
however, the patient said he felt quite well, and all pain had disappeared, but
on dressing the wound the dressings were found to be saturated with bright
green bile. I did not explore the liver that day, but decided to await
events. The symptoms of jaundice due to the presence of bile in the
circulation rapidly began to abate, and on October 28th the patient's
condition was as follows: The conjunctivae had nearly recovered their
normal colour, always a light yellow in the Negro; the pulse-rate was in
accordance with the temperature; the stools were almost white, the
urine was normal, and the wound was discharging bright green bile freely.

It was very evident that some obstruction to the passage of the bile to
the intestine existed, but the cause was not so evident. On October 29th
I again explored the liver very thoroughly with the aspirating needle, but
no abscess was discovered. On one occasion the point of the needle was
felt to enter a cavity, and a quantity of bright green bile was drawn off,
Clinical Notes

the cavity evidently being a dilated bile duct. I then concluded that the obstruction to the hepatic duct might be catarrhal in nature, and prescribed saline purgatives, together with the usual alkaline treatment for catarrhal jaundice, and at the same time plugged the abscess cavity in the liver tightly with sterile gauze, with the idea of preventing the escape of bile, and so bringing more pressure to bear on the occluded duct. To my relief, and also to my surprise, this treatment was successful, and on November 1st it was noticed that very little bile escaped into the dressings, and on November 3rd the stools again showed bile colouration. The temperature, which up to this time had been irregular, fell to normal, and the patient made a rapid recovery, being discharged from hospital on December 10th, on two months' sick leave to his village on the White Nile. This case appears to me to widely differ in its course from most cases of liver abscess, and the occurrence of a biliary fistula is, I believe, most unusual after an operation for the relief of this condition. It seems probable in this case that a large bile duct situated in the wall of the abscess cavity became dilated as a result of the occurrence of obstruction to the passage of the bile to the common duct, and not being supported on all sides by the liver substance, gave way, and the bile being discharged into the abscess cavity, made its way to the surface through the operation wound. A great quantity of bile escaped daily, and possibly all the secretion of the liver passed out of the body in this manner. It is possible that the bile coming from the left lobe through the left duct, on meeting with an obstruction to its onward flow to the duodenum, regurgitated backwards through the right bile duct, following the line of least resistance, until it escaped at the point of rupture of the bile duct. The clinical symptoms of the case also pointed to a complete absence of bile in the circulation after the formation of the biliary fistula, and the presence of an obstruction in the hepatic or the common bile duct was proved by the appearance of the faces. In my treatment of the case I plugged the abscess cavity with sterile gauze, so as to prevent the escape of the bile as far as possible. I do not think this can really have had much effect; the cause of the obstruction was probably catarrhal in nature, and this was relieved either naturally or by the medicinal treatment prescribed. The site of the obstruction may have been either in the hepatic duct or in the common bile duct, and no symptoms presented themselves which could make a diagnosis as to its position possible. The case, which I have attempted to describe, appears to be of some interest, and none of my colleagues, the British medical officers attached to the Egyptian Army, have ever seen a similar case, and they are, like most British military surgeons, men of wide experience in tropical abscess of the liver.