adhesions of the colon and edge of the liver to the abdominal wall with thick inflammatory tissue; this was the hard irregular mass felt at the operation. The falciform ligament formed the left limit.

A subphrenic gas-containing abscess under the left wing of the diaphragm is caused by perforation of a gastric or duodenal ulcer with a slow leak of the stomach contents, so slow that there is often no history pointing to ulcer. The abscess is limited below by adhesions of the great omentum and the front of the stomach to the abdominal wall, to the left by the spleen and gastro-splenic omentum. On the right it is bounded by the falciform ligament of the liver, which, as the abscess enlarges, is pushed very much to the right of its normal position, even to the right nipple line, as in the first case described. Abscess under the right wing of the diaphragm is much rarer, and is more usually due to inflammation of a retrocolic appendix causing an abscess communicating with the colon than to a perforated duodenal ulcer. Its boundaries are by adhesions of the edge of the liver, the transverse colon, and the omentum to the abdominal wall, the mesocolon, and the falciform ligament, which in this case is pushed well over to the left of the middle line. The gas evolved in these foul abscesses makes the area over them tympanitic, and the bell note is heard on the use of two coins.

The pressure upwards of the diaphragm and the inflammation invariably cause changes at the base of the lungs. With gastric ulcer it is the left lung which is affected; with duodenal ulcer sometimes the left and sometimes the right. At first a pleural friction is very often heard over the lower part of the lung, usually at the back, but sometimes in front as high as the fifth rib. In a case of perforated duodenal ulcer where there was no vomiting, this friction over the right lower front led to a few hours' hesitation as to whether it was only a case of diaphragmatic pleurisy, but commencing loss of liver dullness soon settled the diagnosis. The friction is usually followed by adhesion of the pleural surfaces and progressive collapse of the lung, or by a low form of pneumonia. In a few cases there is a clear pleural effusion, and instances have occurred where, a needle having been inserted and clear fluid withdrawn, an accidental push of the needle has sent it through the diaphragm, and the clear fluid has been followed by pus. For some reason it is very rare indeed for pus to form above the diaphragm in these cases. The usual condition is for the lower half of the back of the left chest to become quite dull and silent. The temperature is hectic and suggestive of empyema, and the left base is suspected. But, on examining the heart, instead of finding it displaced to the right, its apex beat will be found external to the left nipple and up in the fourth space, owing to the pushing up of the diaphragm, and there will be a large tympanitic area from the fourth rib downwards.

CHOLEDOCHO-ENTEROSTOMY FOR CONSTRICTION OF THE COMMON BILE DUCT FOLLOWING A PERFORATED DUODENAL ULCER.

By W. A. SNEATH, M.B., Ch.B., M.R.C.S.,

LATE HOUSE-SURGEON AT THE DREADNOUGHT HOSPITAL, GREENWICH.

THIS case is of interest as a rare sequel of perforated duodenal ulcer.

A German, aged 54, was admitted to the Seamen's Hospital, Greenwich, under the care of Mr. E. Rock Carling, on December 14th, 1912. The history was that he had been operated upon in Bremen in June. He stated that bile drained from the wound for several weeks; the flow ceased towards the end of October, when he was discharged. When he started work an incisional hernia developed in the epigastrium, and it was for this he came to the hospital.

Condition on Admission.

He was emaciated and slightly jaundiced, his appetite was capricious, and he had a special distaste for protein and fatty foods. There was a healed scar in the right iliac fossa and a transverse scar running from the tip of the ninth costal cartilage across the right rectus muscle to about two inches beyond the linea alba; it was stretched, and near the costal margin was superficially ulcerated. When the patient strained a large ventral hernia, the size of a football, protruded through the cut recti muscles. The opening in the

latter measured 3½ in. from above downwards and 6 in. from side to side. At the right margin of the scar was a depression, apparently at the place where the abdominal cavity had been drained. There was some thickening and induration of the wound, and more deeply could be felt a vague resistant tender mass passing backwards into the right loin. The faeces were clay-coloured and contained no bile. The urine contained bile; no sugar was present.

The resistant mass on the right side increased, and the jaundice became more pronounced. The temperature rose to 100° F., and five days after admission a sinus formed at the side of the depression in the upper scar, and large quantities of bile escaped. The jaundice rapidly disappeared, but the faeces still contained no bile. After some days the sinus closed, but it opened again subsequently. Consequently, on January 2nd, 1913, Mr. Carling decided to operate.

First Operation.

An incision was made along the upper transverse scar. The omentum, which was adherent to the sac of the hernia, was dissected off and found to be tucked up over the front of the liver. After this had been separated the transverse colon, which was also adherent to the liver, was drawn down. At this stage some coils of small intestine adherent to the sac of the hernia had to be repaired after damage in detaching them.

The biliary sinus was then dissected out and traced downwards and backwards, where it entered a large cystic swelling situated deeply in the right loin on the outer side of the duodenum. This was opened, and 6 oz. of thick, viscid, green bile escaped. The wall of this swelling was lined by mucous membrane; on further investigation it proved to be a dilatation of the common bile duct; the gall bladder was fibrosed and contracted, and contained a small quantity of glairy mucus only. On dissecting out the cystic duct a small quantity of non-odorous, thick yellow pus was discovered between the first part of the duodenum and the liver. The pylorus was adherent to the neck of the gall bladder. There were other adhesions between the omentum, small intestines, and stomach, but these were too numerous to separate.

Diagrammatic schema showing the dilated common bile duct and the site of constriction of the duct. A, Site of obliteration of common bile duct; B, fibrosed gall bladder and obliterated cystic duct; C, choledocho-enterostomy; D, entero-enterostomy; E, transverse mesocolon.

The opening in the dilated common bile duct was brought forwards and sutured to the peritoneum at the right margin of the wound and a drainage tube inserted into the cyst. A tube was also sutured in the gall bladder, and cigarette drains were put above and below the cyst, on account of the escape of bile that occurred during the manipulations. The sac of the hernia, along with the adherent skin, was cut away, and the margins of the neck of the sac drawn together by strong silk mattress sutures. The skin wound was closed by silk-worm-gut sutures. The operation was attended by a good deal of shock.

After-History.

The tube in the gall bladder was removed the next day as no bile was draining through it; the upper cigarette drain was removed on the second day and the lower drain on the fifth day. Bile drained through the tube in the dilated common bile duct freely (3x a day). The wound was kept dry by draining the bile away with a Sprengel's pump. The wound healed very well and the deep sutures held perfectly. After the operation the faeces continued to be clay-coloured, and the sinus showed no attempt to close.

On thinking over the problem which the case presented, it seemed clear from the many peritoneal adhesions present that there had been a general peritonitis, probably of perforative origin. The lower incision in the right

iliac fossa pointed to it being appendicular, but the history that the patient gave of bile draining from the upper wound for several months suggested that it either had something to do with the gall bladder or the second part of the duodenum. From the huge dilatation of the common bile duct it was concluded that there must be some blockage of the common bile duct, and this could only have arisen from an impacted gall stone or from a perforated duodenal ulcer. The most likely explanation of the condition was thought to be that there had been a perforated duodenal ulcer the cicatrix of which had constricted the common bile duct. The local inflammation around the gall bladder had at the same time involved and obliterated the cystic duct, so that the gall bladder had not yielded to the pressure of the secreted bile.

A letter from Dr. Sattler of Bremen subsequently confirmed these surmises. He stated that he operated upon the patient on June 12th, 1912, for a perforated duodenal ulcer with general peritonitis. The surroundings of the ulcer were very necrotic and there were many adhesions to the stomach and gall bladder; the peritoneal cavity was full of pus and bile, so that a counter-opening for drainage was made in the right iliac fossa.

Thus it was evident we were dealing with a case of constriction of the common bile duct following a perforated ulcer of the duodenum. As there was no bile entering the intestine it was decided to endeavour to construct a new channel for it by making an opening between the dilated common bile duct and the small intestine.

Second Operation.

On January 23rd, 1913, a vertical incision was made through the outer margin of the right rectus muscle. The sinus was dissected out and traced to the dilatation of the common bile duct. The latter had contracted down markedly since the previous operation. The sinus was cut away and the opening in the bile duct so made was clamped. The bile duct was freed and the clamp brought as far forward as possible, but owing to the density of the adhesions and the contraction of the bile duct since the previous operation very little relaxation could be obtained.

A loop of jejunum was then brought up through the transverse mesocolon and an anastomosis was made between this loop and the dilated bile duct by two rows of silk sutures. This was rendered difficult by the fixity and the depth of the "duct" and the friability of its walls. The sutures were unevenly placed and there was considerable tension on them. When completed the opening would admit two fingers. Owing to the fixity of the bile duct it was impossible to draw back the loop of jejunum through the aperture in the mesocolon; hence it was found necessary to perform a lateral anastomosis between the afferent-efferent portions of the loop on the under surface of the transverse mesocolon in order to prevent intestinal obstruction.

A cigarette drain was put in the region of the choledocho-enterostomy, and the abdominal wall was closed by through-and-through silkworm gut sutures.

The patient stood the operation extremely well, owing, no doubt, to his greatly improved general condition.

After-History.

Two days after the operation, on the removal of the cigarette drain, bile was noticed coming along the track, but as the faeces contained bile it was obvious that some bile was finding its way into the intestine.

The condition of the patient at this time gave rise to anxiety. He was vomiting freely, the temperature was 101° F., and the pulse 120. A drainage tube was again put in, and shortly afterwards, besides bile, the discharge contained digestive juices. The skin around the sinus rapidly became excoriated, but this was controlled by bismuth and paraffin. The patient became emaciated, the faeces were pale and fatty, and the appetite poor.

After six days the amount of bile and digestive juices escaping gradually diminished and the appetite rapidly improved. The stools became darker and he began to put on weight.

At the end of a fortnight the discharge ceased, the sinus rapidly closed, and the faeces became normal in colour and content.

On March 3rd, when the patient was discharged, he looked extremely well. The abdominal wall was quite strong save at the right margin of the transverse incision where the drainage tubes were at the first operation.

The size of the hernial opening and the difficulty of dealing with it suggest the inadvisability of transverse division of the recti in suppurative conditions which preclude adequate suture.

Although a sinus obviously formed at the site of the choledocho-enterostomy owing to the difficulty of adequately suturing the anastomosis, it healed rapidly and did not interfere with the efficiency of the new passage.

An account of constriction of the bile ducts following

the cicatricial contraction of a duodenal ulcer is given by Moynihan in *Duodenal Ulcer* (1910). He describes two conditions:

1. When the ulcer was situated near Vater's ampulla, and constricted both the common bile duct and the pancreatic ducts.

2. When the common bile duct alone may be involved as it runs behind the first and second parts of the duodenum.

Details of eleven cases of the first class are given, and of five cases of the second class, of which one was his own. No case is recorded in which the constriction followed a perforation of a duodenal ulcer. The cases recorded are all of the very chronic type of ulcer, in which there is marked induration around the base.

The case described here falls in the second group of cases, in which the common bile duct alone was involved. Since the ulcer perforated into the peritoneal cavity, and not into the retroperitoneal tissue, the ulcer must have been situated in the free part of the duodenum—that is, in the first or at the junction of the first and second parts.

The fact that bile was present in large quantities in the peritoneal cavity suggests that the ulcer had perforated through the bile duct in addition to the posterior wall of the duodenum. Whether the bile duct was caught in the sutures which were used to close the ulcer, or whether the constriction followed the cicatrization of the ulcer, is not clear. The fact, however, suggests that in these cases great care should be exercised in suturing the perforation lest the bile duct be involved.

In this case it was impossible to perform an anastomosis between the bile duct and the duodenum owing to the numerous adhesions around the latter. The comparative ease with which the anastomosis can be performed by bringing a loop of jejunum through the transverse mesocolon, and the perfectly satisfactory result ultimately obtained, points to choledocho-jejunostomy being the operation of preference in these cases.

My best thanks are due to Mr. E. Rock Carling for permission to publish this case, and also for the kind assistance he has given me in reporting it.

A CASE OF HAEMATIDROSIS.

BY

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THE following case was brought to my notice by Dr. H. Adcock, of Middleton, Northants, in conjunction with whom these notes are written.

Madeline —, aged 11 years, a bright intelligent girl of rather nervous temperament, commenced to have abnormal perspirations about four months ago, following a "chill on the liver"; since then they have been gradually growing more and more frequent and severe.

The sweats occur upon the forehead only, from the eyebrows to the roots of the hair, and as far as the outer margins of the orbits laterally; they consist of either clear watery fluid or white froth or bright pink fluid. At the present time they recur at intervals of from a minute to an hour, but during waking hours there is rarely a lapse of more than five to ten minutes, and often there are as many as eight "sweats" in ten minutes.

The "frothy" are the most common variety, accounting for 60 of a counted consecutive hundred; the red variety formed 34 per cent. and the watery 6 per cent. They are most frequent soon after waking in the morning and towards bedtime. The quantity secreted at each "sweat" is from 10 minims to 1 drachm; the secretion invariably appears rapidly, so that in a second the forehead is bathed in sweat, and occasionally it is so rapid that it can be seen as it issues from the forehead in a fine jet and can be heard upon the bedclothes. There is a distinct aura, which takes the form of a faint "sick feeling" in the epigastrium, more severe when a coloured sweat is heralded, so that the child will say, "A pink one is coming now," or "Now there is a frothy one," and her prognosis is invariably correct.

There are no sweats during sleep, but she is frequently awakened by one coming on; as a rule she sleeps for some hours at night with no sweats, but her rest is always disturbed by waking for sweats.