We are apt to forget that there is not the tendency to ankylosis which exists in rheumatoid arthritis and makes immobilization so dangerous in that condition.

If we meet with cases already at an advanced stage or who refuse immobilization we can, besides correcting any deformity, apply a spica bandage or a leathern moulded splint, and then allow gentle exercise with the toes turned inwards. Radiant heat followed by massage is most helpful at all stages, and in advanced cases passive exercises may be added. Very great relief from pain is given by ionization with salicylates and iodides, hot sandbags, and inunction of salicylic acid 3ss, menthol gr. x, lanoline ʒiv, with paraff. mollis to an ounce, and some increase of mobility may follow. For drugs we should persevere with arsenic or thymus gland with or without the syrup of iodide of iron. Cheilotomy has been advocated by Sampson Handley, Wheeler, and others. It consists in disarticulating the head of the femur, cutting away the outgrowths, and adapting the head of the bone to the socket. Very good results have been obtained and a freely movable joint formed in young patients where bone changes are not active.

In other cases the joint has been excised and the head mortised to the pelvis with great advantage as to freedom from pain but with complete fixation of the joint.

RECURRENCE OF SYMPTOMS AFTER REMOVAL OF GALL STONES FROM THE GALL BLADDER.

BY

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It is commonly asserted that the results of cholecystostomy are very satisfactory, that symptoms rarely occur after it, and that secondary operations seldom become necessary. My experience, however, is that although this operation is a valuable one, often saving life and giving great relief, symptoms do return after it in a good many cases, and that the demand for secondary operations is far from uncommon. Many patients whose symptoms recur are so very disappointed that they lose faith in operations and prefer to suffer much rather than undergo a further one. During the last six months I have been asked to operate on four patients whose recurrent symptoms had become so intolerable that they abandoned their natural prejudices. I give below brief notes of three of these cases.

Like the appendix, the gall bladder is a vestigial organ which many animals are luckily born without and numerous human beings have lost without detriment. It is admitted to be by far the chief, if not the only, factory of gall stones, whose power for evil is very great. The infection which is the main cause of cholecystitis and the formation of gall stones is known to settle in the wall of the gall bladder and, in many cases, to be incurable by mere drainage. Chronic irritation of the gall bladder sometimes leads to cancer, which is not uncommonly discovered at an early stage on examining the organ after its removal. The hope of cure in these early cases of cancer is very good; one of my patients thus treated over ten years ago is well now.

It is very difficult to find and to be quite certain of removing every gall stone from the gall bladder, and more especially from the tortuous and indurated cystic duct, where a small stone is easily overlooked. Removal of the gall bladder and its duct is the only certain way of getting rid of all stones in these circumstances. This is well shown in Case I. Even if all the stones are removed by cholecystostomy, with or without incision of the cystic duct, stricture of the duct may ensue, causing a mucocele or empyema of the gall bladder or mucous fistula. Sometimes a biliary fistula or chronic jaundice follows kinking of the common bile duct due to the contraction of the inflamed gall bladder. If the latter contains pus or other infective matter it is much cleaner and often easier to remove it and its duct without opening them, thus avoiding the risk of infection of the wound, with delay of healing and weakness of the abdominal wall with ventral hernia. The persistence or recurrence of cholecystitis is not uncommon after cholecystostomy, with or without the formation of fresh stones. This point is illustrated in Case II. Although there were no stones the symptoms had closely simulated those of cholelithiasis. Secondary infection of the

bile ducts and pancreas may ensue in these circumstances, causing jaundice or acute or chronic pancreatitis. It has been a common but mistaken belief that draining is always safer than excising a diseased gall bladder, but experience proves that, with a proper selection of cases and a good surgeon, the reverse is true. Thus the mortality of 2,493 cases of cholecystectomy performed at the Mayo Clinic between 1907 and 1916 was 1.3 per cent., and that of 2,854 cholecystostomies was 1.5 per cent.

It is clear that, for disease limited to the gall bladder and its duct, cholecystectomy is more radical than cholecystostomy. It is, however, not invariably the easier and safer operation. Much depends, as I have said, on the wise selection of suitable cases and upon the skill and experience of the surgeon. In acute cases, when the patient is very ill, old, or feeble, when the gall bladder is very inflamed, distended, and adherent, when inflammatory oedema makes it difficult to identify the bile ducts, the surgeon—especially if he is not very experienced in this branch of surgery—will be wise to choose cholecystostomy as the safer operation in the circumstances. It will probably save life, and, if care be taken to remove all stones, the ultimate result may be satisfactory. If serious symptoms recur a secondary cholecystectomy can be performed, in a quiet period, under more favourable conditions.

It must not be forgotten, however, that these secondary operations may be very difficult owing to the disturbance and confusion by adhesions of the normal anatomy of the complicated biliary apparatus. It is very clear that the surgery of the bile apparatus, like that of the stomach and duodenum, is not to be lightly undertaken by the amateur or the novice. The interests of the patient, as well as the good name and honour of surgery, demand special skill and experience from the surgeon who undertakes this work, for it is impossible to tell what difficult and unexpected problems may present themselves and have to be promptly solved when the abdomen is opened. These operations, sometimes so easy, may, on the other hand, be among the most difficult and hazardous in surgery. When medical men realize these facts we may hope to see fewer bad results and secondary clearing-up operations, such as cholecystectomy and choledochotomy, for the removal of stones left in the common bile duct, and the repair of fistulae or strictures following injuries of the bile ducts. To avoid the last named, constant vigilance and an accurate knowledge of the anatomy of the bile ducts are required. It is necessary to identify the common bile duct quite clearly before proceeding to remove the gall bladder.

There is more room for doubt about the indications for cholecystectomy when the disease (especially cholelithiasis) has extended into the main bile ducts. It is evident that the gall bladder should not be removed unless it is certain that the common bile duct is patent and likely to remain so. It is also clear that it is too risky to be undertaken when the patient is very ill, old, or feeble, and especially in the presence of jaundice which has lasted long enough to diminish the coagulability of the blood—as shown by a previous estimation of the clotting period—thus adding the possibility of uncontrollable bleeding to the dangers of the operation. No one, again, would suggest the removal of the gall bladder when infective cholangitis exists, for in this grave condition the only justifiable operation is the removal of stones and the drainage of the common bile duct, and even this should, if possible, be deferred to a quiescent period, when the risk is much less. Under favourable conditions, however, when the bile ducts are patent, it is very advantageous to the patient to have the diseased gall bladder removed, and thus to be saved from the probable recurrence of symptoms, with or without a subsequent radical operation.

CASE I.

A. C., aged 53, a powerful, stout man, had had cholecystostomy performed for acute cholecystitis in August, 1921, through a long vertical incision made below the ninth right rib cartilage. The operation was said to have been a difficult one, but it was thought that all the stones had been removed. Recovery was slow, but ultimately the man returned to work. He was readmitted into hospital before Christmas for return of symptoms, but these abated, and he was sent out without further operation. A few days later he was laid up with fever (? influenza, probably cholecystitis). Another attack came on soon after, with violent pain in the right hypochondrium and slight jaundice. The gall bladder could not be felt, but there was general rigidity and dullness in the right hypochondrium. An immediate operation was advised, but the patient would not undergo it until he was promised that every endeavour would be made to make it final and radical.

Operation (January 16th, 1922).—Kocher incision. Very dense adhesions were found between the liver (lower edge) and the

parietes, and much blood-stained bile below and above the right lobe of the liver. The adhesions were separated with great difficulty. The gall bladder was empty and had perforated on its lower surface. Although the foramen of Winslow was defined it was impossible to palpate the common bile duct to decide if there were any stones in it, owing to the great inflammatory oedema of the subperitoneal tissues and of the head of the pancreas. A small stone was felt in the cystic duct, and this was extracted with difficulty, after opening the duct. No more could be felt. The common bile duct was opened and a large olive-headed probe was passed into the duodenum and up into both right and left bile ducts without difficulty and without encountering any stone.

Although the patient was very ill it was felt that he would not remain well unless the gall bladder was removed. This was done with difficulty, owing to adhesions and inflammatory changes about the ducts which made it difficult to define them. When the gall bladder had been removed another small stone was found in the cystic duct. This was a great surprise. The common bile duct was drained and the patient made a good and rapid recovery. He has remained quite well since.

CASE II.

Mrs. H., aged 49. There was a history of repeated attacks of hepatic colic, without jaundice, since 1917. Cholecystostomy was performed elsewhere in November, 1919, and seventy-two stones removed. The patient remained well until February, 1922, when attacks of very severe pain recurred at frequent intervals, each attack lasting from half an hour to three hours. There was no jaundice.

Operation (March 15th, 1922).—Cholecystectomy performed. There were no gall stones, but a greatly enlarged, folded, inflamed, and adherent gall bladder containing mucus and bile. A chronically inflamed appendix was also removed. The patient made a good recovery.

CASE III.

Mrs. K., aged 64, had had cholecystostomy performed elsewhere in 1914. In 1916 the attacks of biliary colic recurred, and during the next six years she had six severe and many minor attacks. They were attended by nausea, vomiting, and flatulent distension.

Operation (May 25th, 1922).—Cholecystectomy performed. The gall bladder was found to be full of stones, and several were also removed from the common bile duct. The patient did very well.

A CASE OF HAEMOCHROMATOSIS.

BY

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I VENTURE to publish this short account of a case of haemochromatosis for three reasons: (1) It was possible to obtain a fairly accurate clinical history of the patient's previous illnesses and of the onset of the fatal disease. (2) The clinical data observed during the last stages were interesting. (3) It seems to me that the case opens up new ground in connexion with this somewhat rare disease.

G. H., a man aged 42, was brought up on a farm, and was one of a large and healthy family. As a child he had a severe attack of scarlet fever, followed by acute haemorrhagic nephritis, which completely cleared up. At the age of 25 he was athletic, well developed, and active physically and mentally. He was appointed works manager in a large engineering firm at the age of 27. His complexion was always sallow (olive), and this colour was universally distributed over the whole skin. On one occasion, fifteen years ago, whilst bathing, this discoloration of the skin was markedly noticeable and was joked about. Five years ago, at a large daylight meeting in a neighbouring town, his doctor, who was acting as door-keeper, on looking up at the gallery noticed his patient's face stand out as a greenish-yellow blotch amongst all the others. His health remained fairly good, except for occasional attacks of dyspepsia, which were characterized by sleepiness and heaviness in the morning, but as far as I can gather were not accompanied by abdominal pain or vomiting. On one occasion calomel was prescribed and acted with extraordinary vigour.

In 1916 an abscess developed on the dorsum of the right foot. This was followed by other abscesses in various parts of the body, and finally by a prostatic abscess, which burst into the rectum. *Bacillus coli* was found to be the causative organism, and he was treated by vaccines, which did not, however, prevent other abscesses developing. The discoloration of the skin varied in depth according to his general health, becoming much lighter after a month's holiday. It may be mentioned that he always took "Fellows' syrup" as a tonic when he felt run down, but I have no data as to the effects of this substance upon the pigmentation of the skin.

In December, 1921, he first consulted me because he felt tired after exercise, and had insomnia, and cramps in the legs. Examination showed nothing abnormal, except that the liver extended $1\frac{1}{2}$ inches below the costal margin, the edge being hard and well defined. The spleen was not palpable. It was easy to examine the abdomen as the muscles were not at all rigid. The urine contained 7 per cent. sugar, but no albumin, acetone, or diaceto-acetic acid. He was gradually dieted down to meat, eggs, green vegetables, butter, and 4 oz. of bread daily; but the urine

still contained about 7 per cent. sugar, and the quantity was 5 pints daily. He then went to an institution for treatment, where he stayed about three months. The report on admission was as follows: "Height 5 ft. 11½ in. Weight 11 st. 2 lb. Pale, thin, and tired-looking. Pulse 68. Systolic blood pressure 114 mm. Hg. Blood 90 per cent. Hb; red cells 4,450,000 and white cells 3,200 per c.mm.; blood sugar, 0.34 per cent. Faeces normal. Urine (twenty-four hours) 2,856 c.cm.; specific gravity 1035, acid, sugar 157 grams, traces of acetone and aceto-acetic acid. Albumin, a faint trace." The fat was restricted and followed by a two days' fast in bed; a little protein was then allowed for three days, followed by another fast for two days. After the second fast the urine was sugar-free. Food was then allowed, starting with proteins only. Glycosuria returned with 80 grams protein, 3 grams carbohydrate, and 3 grams of fat. The diet was gradually increased, the fat and carbohydrates being kept low and a fast day instituted once a week. On this régime the sugar in the urine fell to a trace on the fast day, rising to 100 grams by the end of the week. The blood sugar fell to 0.19 per cent. during the fasting; subsequently it varied between 0.24 and 0.40 per cent. There was no appearance of acetone or aceto-acetic acid. On leaving the institution his weight was 9 st. 10½ lb., a loss of 19½ lb. His thirst had almost gone, and he felt stronger. When he returned home his teeth, antra, and sinuses were examined, but no septic foci were discovered.

In April, 1922, the liver was markedly enlarged, to the level of the umbilicus, hard, with signs of lobulation in the epigastric area. The spleen was easily palpable. From this time until his death in June, 1922, the urine was repeatedly examined for acetone and aceto-acetic acid, but the result was always negative, despite the fact that for the last two or three weeks he was in a semi-comatose condition. During this time darkish pigmentation appeared, chiefly round the elbows and on the hands. The following diet and urine chart may be of interest:

	Carbo- hydrate.	Protein.	Fat.	Urine.
	Grams.	Grams.	Grams.	
April 6th	30	198	42	6½ pints; 2.8% sugar.
April 18th	42	201	54	7½ " 5% "
May 12th	14	186	19	7 " 6% "

He was now allowed 40 grams of white bread daily, and later this was increased to 60 grams, together with 5 oz. of milk. After the semi-comatose condition was established he practically lived upon skimmed milk and soda-water. He became gradually weaker, and died from exhaustion on June 8th. He was quite conscious just before his death.

A complete *post-mortem* examination was out of the question, but a portion of skin from the back of the hand was examined and showed a well-marked reaction for iron. The dark pigmentation was most marked over the backs of the hands, the elbows, and shins, and on the genital organs.

I desire to thank Dr. J. Orton of Coventry and Dr. A. P. Thomson of Birmingham for their valuable help in writing this short record of the case.

I would draw attention to several points in this case which strike me as being particularly interesting.

1. Did the attack of nephritis in childhood, which cleared up, have anything to do with the subsequent disease? Could it have left the kidney uninjured except for difficulty in excreting iron?

2. The fact that the patient's colour altered considerably at different periods appears to show that if this disease is due to loss of renal excretion of iron, then the loss is not total.

3. Although in a semi-comatose condition with a glycosuria of 7 per cent., there was no sign of aceto-acetic acid or acetone in the urine. I think we may presume that the pancreas was almost totally destroyed; if so, then there must be some other unknown cause for the presence of acetone in the urine of ordinary diabetics.

4. Cases of haemochromatosis are probably more common than we think, and could be diagnosed at an early stage after the peculiar colouring of the skin has become noticeable. I have no doubt that careful dieting would enable them to live for longer periods, and useful lives might be prolonged.

THE late Mr. A. D. Serena, of York Terrace, Regent's Park, who left net personalty of £374,214, bequeathed £10,000 free of duty to the London Hospital. After paying certain legacies the remainder of the estate is to be divided among some forty-four charities, including the following hospitals: London, Charing Cross, King's College, Guy's, Middlesex, University College, Royal Free, St. Bartholomew's, St. George's, St. Thomas's, St. Mary's, Royal Northern, Royal Hospital for Incurables, Poplar Hospital for Accidentals, Hospital for Consumption and Diseases of the Chest, Fulham Road, Cancer, Chelsea Hospital for Women, Queen Charlotte's Lying-in, Hospital for Sick Children, Great Ormond Street, Lock Hospital, Harrow Road, and the Italian.