

PROBLEMS IN BILIARY SURGERY*

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Cholelithiasis is an extremely common disease and operations on the biliary tract are frequently performed. This paper is based on experience of more than 300 personal cases. I should like to discuss some common problems that confront us.

1. *The Silent Gallstone*

Although this is no problem to most surgeons, it is surprisingly frequent to hear patients tell that they have gallstones and their doctor has told them that they should not have treatment because they are asymptomatic. Lund,³ of Denmark, followed-up 526 cases of cholelithiasis that had not been operated on. These stones were found on routine examination, either radiologically or at operations for other conditions.

At least 50% of the female patients in this series and 30% of the male patients developed severe symptoms and complications. The duration of symptoms before diagnosis was not significant and the fact that the patient had no symptoms or only a short history did not indicate less likelihood of complications. Most of the previously asymptomatic cases developed symptoms within 5 years; 14 of the patients in this series died of gallstone disease. The complications that occurred were mainly caused by attacks of acute cholecystitis or by common-duct stones and their sequelae.

The younger the patient is when operated on, the lower the mortality. Many series have shown that the mortality for gallbladder disease was substantially higher for patients over 60 years of age.

Postcholecystectomy syndromes are far less common in patients with a short history than in those who have already become chronic 'belchers', etc. or have a long history. The risk of carcinoma of the gallbladder, admittedly small, is eliminated by early operation.

I should like to emphasize that the so-called silent gallstone—and it is seldom silent if you follow the patient's course long enough—should be removed. The tragedies of biliary-tract disease are mainly due to neglect.

One word of warning: Never perform a cholecystectomy as an incidental or additional operation when these silent stones are found. It increases the morbidity and mortality markedly. This has recently been stressed by Glen and McSherry,¹ of New York.

2. *Acute Cholecystitis*

The problem is when to operate on these cases. There are two distinct schools—those who prefer to operate early and those who prefer to follow an expectant course and operate later.

These cases are very seldom emergencies, and operation is only undertaken when the patient is fit.

The diagnosis, if not established, is easily confirmed by intravenous cholangiogram. This shows a cut-off cystic duct and at the same time reveals the anatomy of the common bile duct and whether intra-duct stones are present.

The advantages of early operation are as follows: (1) Because of the oedema that occurs, planes of cleavage are easily found and dense adhesions do not occur. (2) The danger of perforation and abscess formation is avoided. (3) The patient has only one period of illness. These advantages are more important in the elderly than in the younger patient. Stohl and Diffenbaugh⁶ found the incidence of perforation twice as high in patients over 60 years of age.

If there is any difficulty with operation, cholecystostomy is a life-saving procedure. I do not believe that patients with acute cholecystitis should be discharged from hospital for an interval cholecystectomy unless there is a very definite reason. It is common experience that even after 3 months of waiting the gallbladder can still be found to be acutely inflamed and surrounded by dense adhesions. The danger of damage to the common duct is no greater than in interval or cold cholecystectomy; generally strictures are not common in this country.

In a large personal series of operations on acute cholecystitis I have not found it necessary to perform cholecystostomy nor have I had any regrets that surgery has been undertaken. Age definitely is not a contraindication, but the patient must be made fit for operation before early surgery is undertaken.

3. *Stenosis of the Sphincter of Oddi*

In recent years surgeons who operate on patients with biliary disease have become increasingly aware of this

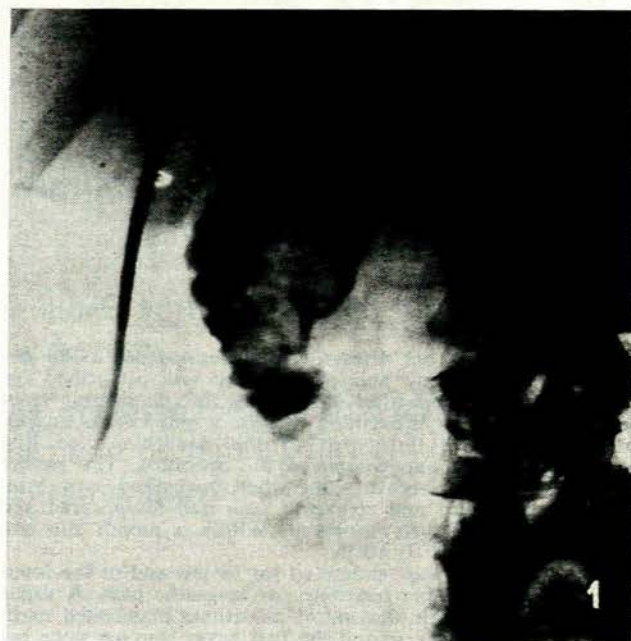
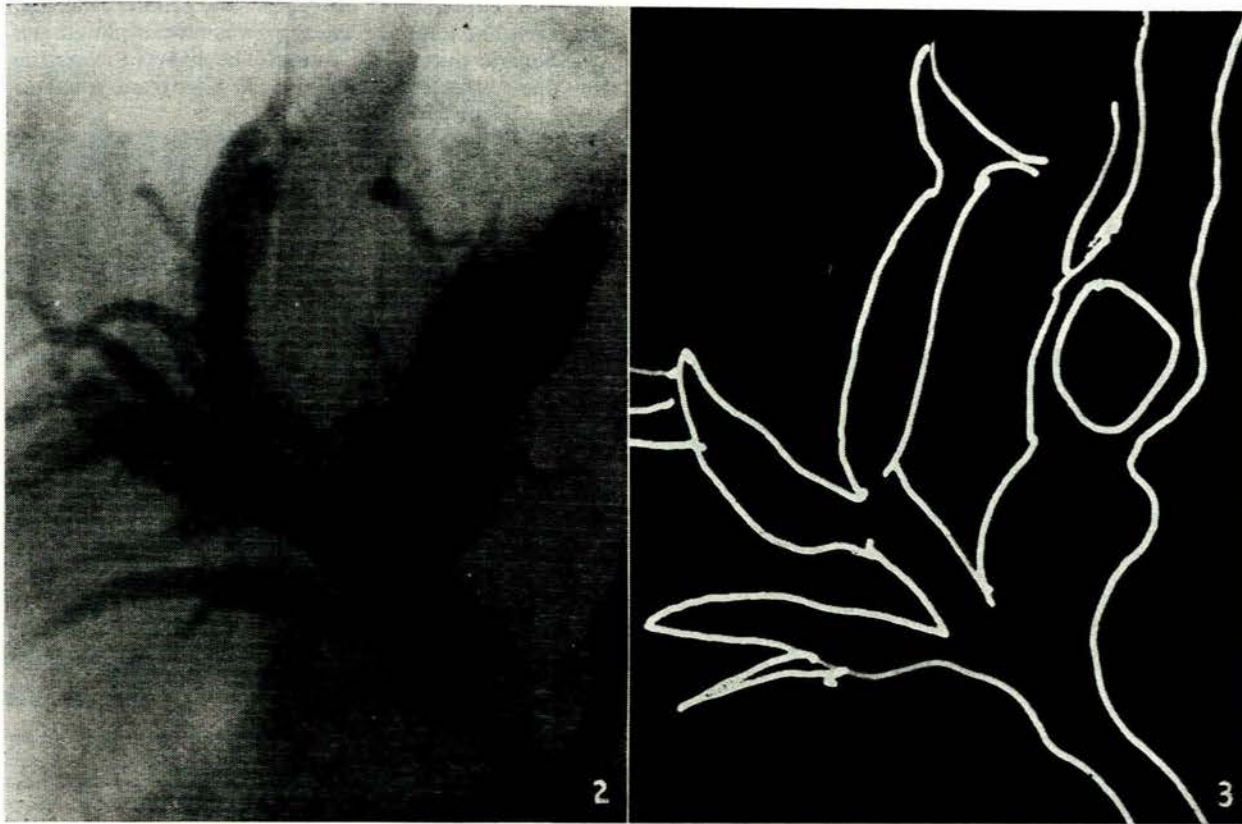


Fig. 1. An operative cholangiogram performed through a catheter in the common bile duct. Note the marked cut off of the dilated common bile duct and the long stenosed area.

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Figs. 2 and 3. An intravenous cholecystogram. The left intrahepatic duct is grossly dilated and an intrahepatic stone is shown. This is illustrated diagrammatically in the black and white diagram.

condition, especially in cases of post-cholecystectomy syndromes. Recurrent attacks of severe pain in the right upper quadrant with or without jaundice may result from obstruction at this point. Stones in the common bile duct, and pancreatitis, must be eliminated. The diagnosis has been made easier by the use of intravenous biligradin for cholangiograms. Wise,⁷ of the Lahey Clinic, determined that any common bile duct of over 15 mm. diameter was obstructed, and any between 8 and 15 mm. might be obstructed, depending on the time-density ratio. In patients where the dye is of the same density at the end of 120 minutes as at 60 minutes, a diagnosis of obstruction of the duct can be made (Fig. 1). In the absence of stones, the diagnosis is stenosis of the sphincter of Oddi. Surgically this is proved by exploring the common bile duct, and if a 3-mm. Bakey probe does not pass through to the duodenum a stenosis exists. The treatment is sphincterotomy. I also believe that in many cases this fibrosis is the cause of stones in the common bile duct. Because of this, whenever stones are removed from the common bile duct the sphincter of Oddi should be measured, and if it is less than 3 mm. a sphincterotomy should be performed.

4. Intrahepatic Stones

Fortunately intrahepatic stones are very rare—only 2 cases in this series. When exploring the common bile duct it is not uncommon for stones to fall upwards into the

liver but those are easily washed down or delivered with Desjardins' forceps. In the 2 cases mentioned, pre-operative intravenous cholangiograms revealed stones in the liver (Figs. 2 and 3). Irrigation would not displace them. Curretting showed that they were in a sacculus of the intrahepatic duct. One is then left with two choices—either to leave alone, hoping that the stone is in a sacculus and that this will fibrose and not cause back-pressure, obstructing the duct, or alternatively to cut down on the stone. This is done by passing a probe to the stone and cutting down on it, with a diathermy needle. A T-tube is now inserted upwards towards the affected duct. The liver is then apposed and drained. In the one case we did this and no biliary fistula developed. In the second case the stone was left and in a 5-year follow-up the patient has been asymptomatic. Glen and Moody² report 4 cases in which the stones were left; they all developed cholangitis.

5. Cystic-duct Stump Syndrome

Post-cholecystectomy syndromes are a troublesome problem in biliary surgery and are distressing to the patient. The cause is difficult to diagnose; it may fall into one of the following 4 main groups: (1) poor selection of patients for surgery (acalculous cholecystitis); (2) symptoms due to obstruction at the lower end of the common duct; (3) symptoms due to incomplete cholecystectomy; or (4) symptoms due to causes other than cholecystitis, either not

diagnosed or not treated at the time of the cholecystectomy.

The cystic-duct stump syndrome falls in the third of these groups. I reported 4 cases in 1959,⁴ and since then have operated on a further 6 cases. The chief symptom is pain, which may be colicky in nature and is provoked by fatty foods. Jaundice is the second commonest symptom. The previous symptoms of cholelithiasis sometimes recur, or symptoms of cholangitis may develop.

The symptoms of cystic stump may occur up to 20 years after the primary operation. Intravenous cholangiogram (Figs. 4 and 5) demonstrates the lesion. At operation



Fig. 4. At operation the cystic-duct stump has been cannulated. The large cystic stump that was left can be seen in this radiograph. Removal of this remnant cured the patient of her symptoms.

all other causes have to be eliminated and only then can the remnant be implicated. The fact that the removal of the duct remnant causes a disappearance of the symptoms should be sufficient proof of the entity. In all but one of my cases there was a dramatic improvement of the symptoms.

6. Strictures of the Common Bile Duct

This problem is far too vast to discuss in this short paper, but I should like to introduce one case to illustrate a point of technique. It is one of a series of 19 that we have repaired.⁵ In this patient a cholecystectomy was performed elsewhere, and on her developing jaundice a short time afterwards a further operation was performed, when the stricture was found and a repair carried out. The patient then became jaundiced again and was referred to me. X-ray revealed a very tight stricture (Fig. 6). We proceeded

with an exploratory operation and found the narrow stricture. The hilum of the liver was now explored and the two hepatic ducts were found. The pancreatic portion of the duct was then found in a retrograde method by



Fig. 5. Diagrammatic representation of cystic-duct stumps that were found at operation. In one case the duct remnant contained stones. The remnant may be bound down to the common duct and may have to be dissected off before removal.

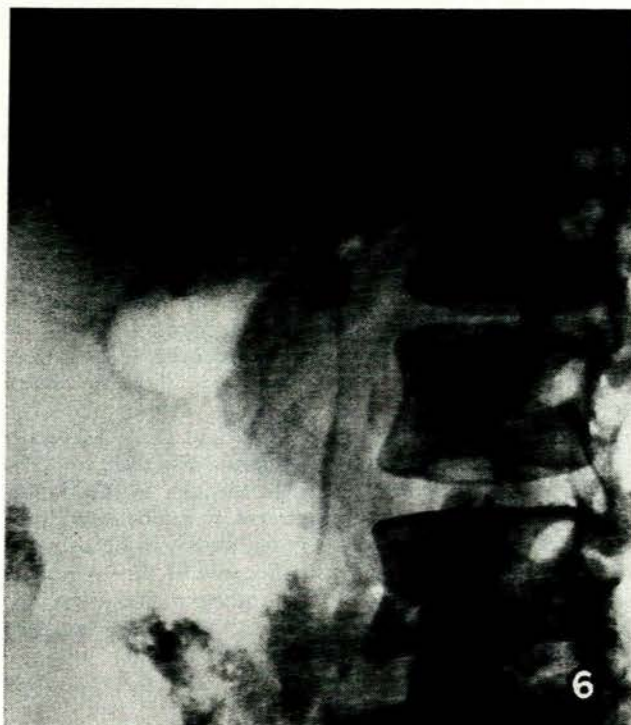


Fig. 6. An intravenous cholangiogram showing the long stenosed common bile duct. As can be seen at the proximal end there is some dilatation.

entering it through the ampulla transduodenally. Two polyvinyl tubes were threaded upwards into the hepatic ducts and downwards into the common bile duct, and a one-layer closure with chromic catgut was carried out. It was intended to go in and remove the tubes after 2 years, but now after a follow-up the patient shows no signs of obstruction, and so we have decided to leave this at present. After 3 years she is very fit.

The advantage of the polyvinyl tube is that it is soft and does not cause pressure, and is less liable to silt up than rubber. It is also radio-opaque.

If a portion of the common hepatic duct is found below the hilum of the liver, the results of repair are excellent or good, but if the stricture is situated in the hilum, the results of reconstruction are usually poor.

In the case described the lower end of the duct was mobilized from the pancreas and used in the repair. If this is found too narrow, the next best procedure is to construct a Roux-en-Y jejunal loop and use this.

SUMMARY

1. The 'silent' gallstone is discussed. Operation is always indicated when the patient has gallstones.
2. The problem of acute cholecystitis is presented and its management is discussed.
3. The interesting features of the syndrome of stenosis of the sphincter of Oddi and the cystic-duct stump syndrome are enlarged on.
4. The surgical management of intrahepatic stones is presented.
5. A method of dealing with stricture of the common bile duct is briefly suggested.

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