A DOUBLE GALL BLADDER

Demonstrated by Operative Cholangiography

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FIG. 1.—Pre-operative cholecystogram showing gall stones.

The presence of two gall bladders in man is uncommon, although their presence in sacrificial animals has been known since ancient times, (Moore and Hurley).

The first case in man was found at autopsy by Blasius in 1674, but not until 1911 was a case discovered at laparotomy (Sherren).

Moore and Hurley reviewed the literature in 1954, and found only 36 cases of complete duplication which had been proved either by laparotomy or autopsy. This included one case of their own, but excluded all those cases shown only by cholecystography. Since then at least two further

FIG. 2.—Operative cholangiogram through a canula tied into the cystic duct, showing filling of the accessory gall bladder and duct.

cases have been described by Whittenberger, and Mulla and Weintraub.

Case History

N.W. Male; age 48 years. First complained of epigastric pain in February 1953, which lasted only a few days. He had no further trouble until October 1955, when he had attacks of colicky epigastric pain radiating through into the back and brought on by fatty food.

In December 1955, he had a further attack of pain, which was associated with jaundice, a dark coloured urine and clay coloured stools.

FIG. 3.—Showing the two gall bladders which have been separated. Coloured glass rods show the two cystic ducts.

When seen in January 1956, he was a fit man and was not jaundiced. He had slight tenderness under the right costal margin but the liver and gall bladder were not palpable.

A cholecystogram (Fig. 1) showed non-opaque calculi in the gall bladder which otherwise showed good concentration of the dye. No other abnormality of the gall bladder was thought to be present.

A laparotomy was performed on March 27, 1956. The gall bladder was thickened and contained several small stones. The common bile duct was a little dilated but no stones were felt in it. The pancreas was normal. In view of the history of jaundice, a cholangiogram was performed through a canula tied into the cystic duct, which was normally situated. A total of 20 ml. of 35 per cent. Diodone was injected into the common bile duct and three X-rays taken. It was now noted that the gall bladder felt more distended, and on further dissection to explore the cystic artery, another duct entering the gall bladder was found. This was of the same size as the normally positioned cystic duct and lay superior to the cystic artery. On examining the cholangiogram (Fig. 2), an accessory duct from the right hepatic duct was seen to enter the gall bladder. The Diodone did not enter the duodenum and the common bile duct was opened; no stones were found, and the ampulla was dilated with Bakes dilators. The common bile duct was closed over a T tube; the gall bladder was removed tying off the accessory duct. On examination of the gall bladder, it was now found to be double with no communication between the two parts,

which were enclosed in the same serous coat. The stones were found to lie in the gall bladder draining into the normally placed cystic duct. This gall bladder was thickened while the other was thin walled.

The post-operative course was complicated by a segmental collapse in the right lower lobe.

A post-operative cholangiogram through the T tube showed a normal common bile duct and the Diodone flowed normally into the duodenum. Following removal of the tube there was a little discharge of bile before healing occurred.

Pathology

(DR. F. K. STORRING: Fig. 3.)

Specimen consists of (1) a thick walled gall bladder, and (2) an accessory smaller gall bladder. The wall of the latter being only moderately thickened.

Histology: (1) The main, thick walled gall bladder shows proliferation of the mucous membrane with the formation of numerous Rokitanski-Aschoff sinuses penetrating deeply into and through the muscularis. There is overgrowth of fibrous tissue mainly in the inner zone of the subserosa. Lymph follicles with germinal centres as well as collections of plasma cells and lymphocytes are scattered throughout the entire wall of the gall bladder. The appearances are those of a chronic proliferative glandular cholecystitis.

(2) The accessory gall bladder is lined by a mainly columnar, partly cuboidal type of epithelium showing a striated border in places and occasional goblet cells. Whilst the muscular layer

appears atrophic, there is a moderate increase in fibrous tissue. Scattered throughout the wall of the gall bladder and in relation to blood vessels are occasional collections of lymphocytes. The appearances are those of a mild chronic cholecystitis of the fibrotic type.

Discussion

Pathology and Incidence. Congenital duplication of the gall bladder may be of a complete or incomplete variety (Boyden). Incomplete varieties are very rare in man, and are due to division of the gall bladder by a septum (complete or partial), or by a diverticulum arising from one part of the gall bladder.

In complete duplication the two gall bladders do not communicate and may be widely separated. Usually, however, they have a common serous coat, which may make it difficult to detect the presence of the abnormality. The cystic ducts may enter the extra hepatic biliary system at separate points, the so called H type, or they may join together to form a common cystic duct which then usually joins the common hepatic duct in the normal position (Y type).

Where the information was available 24 cases were of the H type and 8 of the Y type. In one rare case one cystic duct entered the liver directly (Croudace).

Multiple gall bladders, although found in animals, have not been described in man. Boyden in an investigation of 19,000 patients and cadavers found only 5 cases of an accessory gall bladder. However, in animals he found partial or complete duplication in one in eight cats; 1 in 28 calves; 1 in 85 sheep; and 1 in 198 pigs. Multiple duplication was found in some animals.

In a consideration of the evidence in animals and in man, Boyden thought that the accessory gall bladder arose as 'an outgrowth of a secondary vesicle—subsequent to the formation of the definite gall bladder—from some other portion of the biliary duct system.'

Either or both gall bladders may be affected by diseases common to the gall bladder, usually cholecystitis or cholelithiasis. Owing to their usually close proximity both are commonly affected. In the case reported here, only the one gall bladder was thickened and contained stones, although the other was histologically abnormal.

It is difficult to determine whether this anomaly is more prone to disease than a single gall bladder, as only the diseased ones are removed and the abnormality definitely proven. Many more normally functioning double gall bladders have been seen on cholecystography but as their diagnosis by this means may be misleading, no true comparison can be made.

Diagnosis

The diagnosis may be made on cholecystography and the two gall bladders may sometimes be separately defined by using different projections.

In the case reported by Moore and Hurley a normal gall bladder was shown on cholecystography, but on laparotomy for repeated symptoms the two gall bladders were separate. One only was inflamed, whereas the other was normal and was not removed.

In the case reported here, the diagnosis was not made until examination of the operative cholangiogram showed filling of the accessory gall bladder. On further studying the cholecystogram, the diagnosis could probably have been made using further X-ray projections to separate the two gall bladders. In their common serosal covering the two gall bladders could not be separately defined, and the cholangiogram relieved one of anxiety when the abnormal duct was found.

Treatment

This follows the usual surgical management of diseases of the gall bladder.

A non-diseased double gall bladder found on cholecystography does not warrant removal.

If at laparotomy the two gall bladders are separate and only one is diseased, it is reasonable to remove only this one. This has been possible in only three cases.

Summary

A further case of an accessory gall bladder is described, with a separate cystic duct entering the right hepatic duct. The two gall bladders were covered with a common serous coat. The abnormality was shown on operative cholangiography.

Thirty-eight cases proven by laparotomy or autopsy had been previously described.

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