Diverticulum of the Common Bile Duct *

A Case Report

JOHN F. ALDEN, M.D., E. R. STERNER, M.D.

From the Departments of Surgery and Radiology, Bethesda Hospital, St. Paul, Minn.

DIVERTICULUM of the common bile duct, also known as congenital cystic dilatation of the common duct, is a rare lesion. The latest tally of reported cases numbers 209.[1]

The case to be presented is of particular interest because of the unusual roentgenographic findings which suggest a duodenal polyp.

CASE REPORT

The patient, an 18-year-old girl of Scandinavian descent, complained of nausea and left-sided upper abdominal pain of 1 month's duration. The pain was not severe or colicky. It was not related to meals and there was no vomiting. She had never been jaundiced. Her past health was excellent and her family history noncontributory.

Physical examination was entirely normal. No abdominal tenderness or abnormal masses could be elicited.

Routine laboratory studies were normal.

X-ray examination of the upper gastro-intestinal tract was negative except for the presence of a rounded polyp-like lesion in the second portion of the duodenum (Fig. 1). Cholecystograms were normal.

A laparotomy was performed and the second portion of the duodenum opened. An out pouching of the mucosa of the posterior duodenal wall which looked in all respects like a broad based polyp about 2 cm. in diameter was encountered. When its base was transected normal appearing bile flowed freely from the defect in the duodenum. It was then discovered that the polyp-like protrusion in the duodenum was in reality a diverticulum which communicated with the intramural portion of the common duct. The gall bladder was normal. The defect in the posterior wall of the duodenum was sutured and the duodenum closed. Recovery was uneventful. Pathologic examination of the specimen showed that it contained all of the elements of the normal common bile duct and was covered with duodenal mucosa. There was no sign of an inflammatory reaction.

* Submitted for publication June 11, 1956.

The patient has been followed for 8 years since operation and has enjoyed good health. She has had no symptoms referable to her biliary system. Barium studies of the upper gastro-intestinal tract done approximately 8 years postoperatively were normal. The bile ducts were not visualized by intravenous cholangiography although the gall bladder appeared to be normal at this time.

COMMENT

The occurrence of common bile duct diverticula is rare. Approximately 80 per cent of the reported cases have been in females. They have been reported in infants, children, and adults. The size of the reported diverticula has varied from 30 to 8,000 cubic centimeters in volume, and most are reported occurring in the common duct superior to the duodenum so that the duodenum is displaced medially and inferiorly.[4] Sterling [2] studied 70 consecutive autopsy specimens and found four diverticula of the terminal portion of the common duct. Two of his cases were associated with common duct stones and one with pancreatitis. The remaining case, without stones or pancreatitis, most closely resembles this case anatomically. He postulated obstruction as the main etiologic factor.

From our own and other reported cases, as well as the fact that the lesion has been found in the embryo by Heiliger, we are inclined to accept the theory that the diverticula arise embryologically in a small bud of an accessory duct.[3] The jaundice associated with many reported cases can well be explained on the basis of the large size of the diverticulum exerting a valve like effect on the common bile duct leading to obstruction and jaundice. Therefore the jaundice may represent obstruction due to

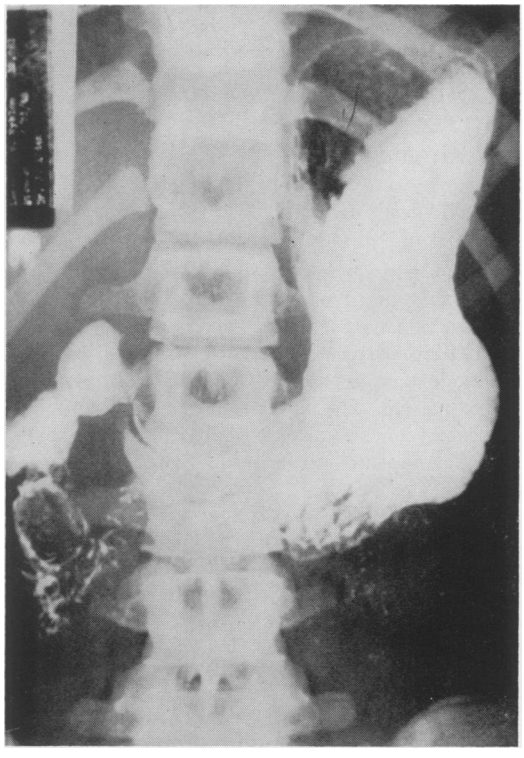

FIG. 1. Radiograph demonstrating filling defect in the second portion of the duodenum.

the cyst and not merely an additional manifestation of an obstruction causing the formation of a diverticulum and jaundice.

The case presented suggests another diagnosis one must entertain when faced with radiographic evidence of a polyp in the second portion of the doudenum. Duodenal polyps in themselves are unusual. It would seem that further investigation of the biliary system by means of intravenous cholangiography in instances of a suspected polyp might uncover more diverticula.

The surgical treatment of the large diverticula has consisted of anastomosing them to the intestinal tract. In our case simple excision sufficed.

SUMMARY

1. A case of common bile duct diverticulum has been presented.

2. The diverticulum is probably congenital in origin.

3. Radiographic evidence suggestive of a duodenal polyp may be caused by the diverticulum.

BIBLIOGRAPHY

1. Saltz, Nathan J. and Kurt Glaser; Congenital Cystic Dilation of the Common Bile Duct. Am. J. Surg., **91**: 56, 1956.
2. Sterling, Julian A.: Diverticula in the Terminal Portion of the Common Bile Duct. Am. J. of Path., **25**: 325, 1949.
3. Waller, Erik: Idiopathic Choledochal Cyst. Ann. Surg., **66**: 453, 1917.
4. Zinninger, M. M. and J. R. Cash: Congenital Cystic Dilation of the Common Bile Duct. Arch. of Surg., **24**: 77, 1932.