
CASE REPORT

**ANOMALOUS HEPATOPANCREATIC DUCT:
A CASE REPORT**

¹Reema NAIR**¹Velayudham NAIR****²Krishnaraj SOMAYAJI****³Venkata Ramana VOLLALA***¹Mookambika Institute of Medical
Sciences, Kulashekaram,**²Manipal College of Dental Sciences,
Manipal,**³Department of Anatomy, Melaka
Manipal Medical College, Interna-
tional Centre for Health Sciences,
Manipal,**India**Received: 15.10.2009**Accepted: 17.02.2010***Correspondence to:***Venkata Ramana Vollala**Department of Anatomy, Melaka
Manipal Medical College (Manipal
Campus), International Centre for
Health Sciences, Manipal,
India**email: ramana_anat@yahoo.co.in***ABSTRACT**

The variation of extrahepatic biliary anatomy is useful for a surgeon during surgeries on gall bladder, duodenum and pancreas. A sound knowledge of the normal anatomy of the extrahepatic biliary tract is thus essential in the prevention of operative injury to it. We present a rare case of hepatopancreatic duct which is unusually long and opening into the third part of duodenum.

Keywords: *hepatopancreatic duct; gall bladder; duodenum; pancreas*

INTRODUCTION

The biliary tree consists of the system of vessels and ducts which collect and deliver bile from the liver parenchyma to the second part of the duodenum.¹ The right and left hepatic ducts emerge from the liver and unite near the right end of the porta hepatis as the common hepatic duct which descends approximately 3 cm before being joined on its right at an acute angle by the cystic duct to form the bile duct. The bile duct is usually between 6 and 8 cm long and descends in the right free margin of lesser omentum, passes behind the first part of the duodenum and then runs in a groove on the superolateral part of the posterior

surface of the head of the pancreas. The bile duct and major pancreatic duct enter the second part of the duodenal wall together and unite to form the hepatopancreatic ampulla.¹

The reported variations of the bile duct include; it opening separately from the pancreatic duct into the duodenum,² entering into fourth part of the duodenum and less commonly into more proximal sites such as the stomach and duodenal bulb.³⁻⁶

CASE REPORT

During routine dissection classes to undergraduate

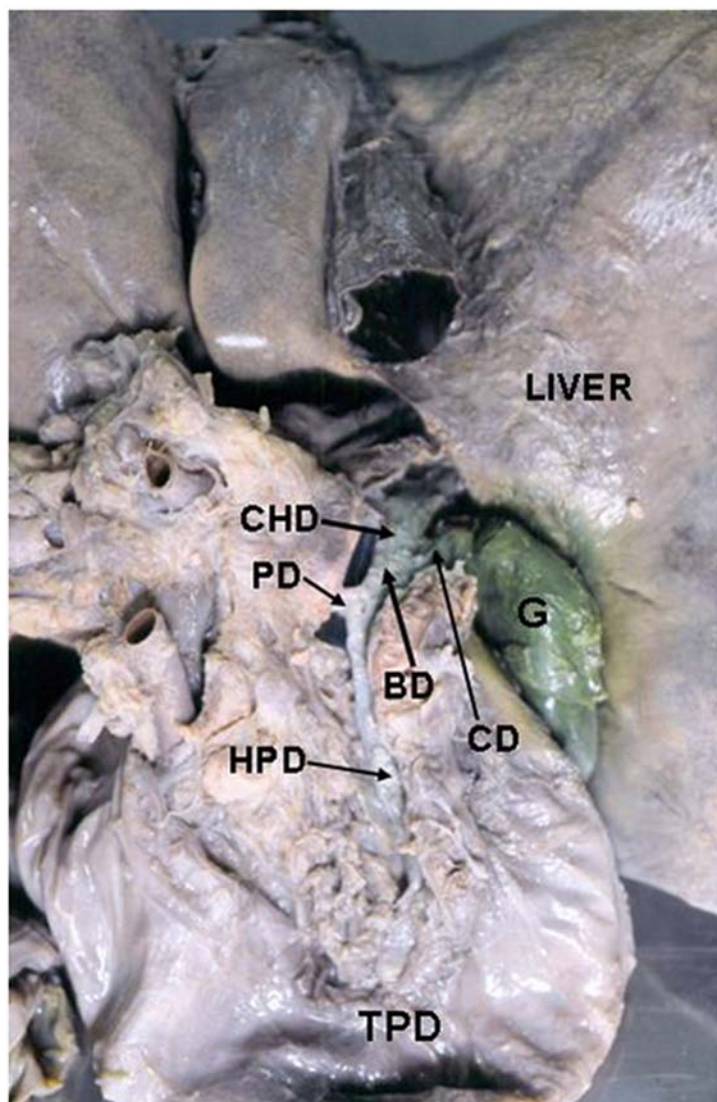


Figure 1. Photograph showing anomalous hepatopancreatic duct (postero - inferior view)

CHD – common hepatic duct;
 CD – cystic duct;
 BD – bile duct;
 PD – pancreatic duct;
 HPD – hepatopancreatic duct;
 TPD – third part of duodenum;
 G – gall bladder

medical students the bile duct was found to be variable in its course. Right and left hepatic ducts emerged from the porta hepatis in front of the portal vein and its branches and immediately united to form the common hepatic duct which was 2.5 cm in length. Cystic duct from gall bladder joined into it to form the bile duct. The bile duct so formed passed behind the first part of duodenum, pierced the head of the pancreas and traveled through it closure to its anterior surface to the lower end of its right lateral border to open into the beginning of the third part of the duodenum (Figure 1). It is joined by the pancreatic duct which emerged from the upper part of head of pancreas. We were unable to find any other pancreatic duct piercing the duodenum. The length of the common hepatopancreatic duct was 9 cm but the bile duct was only about 2 cm in length.

Splenic artery passed through the body of the pancreas close to its upper border to reach the hilum of the spleen. The course of the artery was almost straight without being tortuous as normally described. The splenic vein also accompanied the artery within the body of the pancreas (Figure 2).

DISCUSSION

The most outstanding feature of the normal anatomy of the extrahepatic biliary system is its high degree of variability. In the rare studies about this subject, abnormal opening of the common bile duct is reported at a wide range of 5.6 to 23% due to the limited number of cases.^{3,7,8} Lindner et al. examined 1,000 intraoperative cholangiograms and they found that the rate of distal opening versus the normal anatomic site was 13.1%;⁹ however, as in the present report longer hepatopancreatic duct of approximately 9 cm opening into the third part of the duodenum is a rare observation. Such an abnormal hepatopancreatic duct is at great risk in diseases of the pancreas. Anomalous opening of the hepatopancreatic duct into the third part of the duodenum can cause some problems for clinicians due to its anatomical location; 1) while doing Endoscopic Retrograde Cholangiopancreatography (ERCP) the interventional radiologist may not be able to find the ampulla of Vater and cause difficulty in procedure unless he is aware of this anomaly, 2) To explore the ampulla of Vater for sphincteroplasty in bile stone condi-

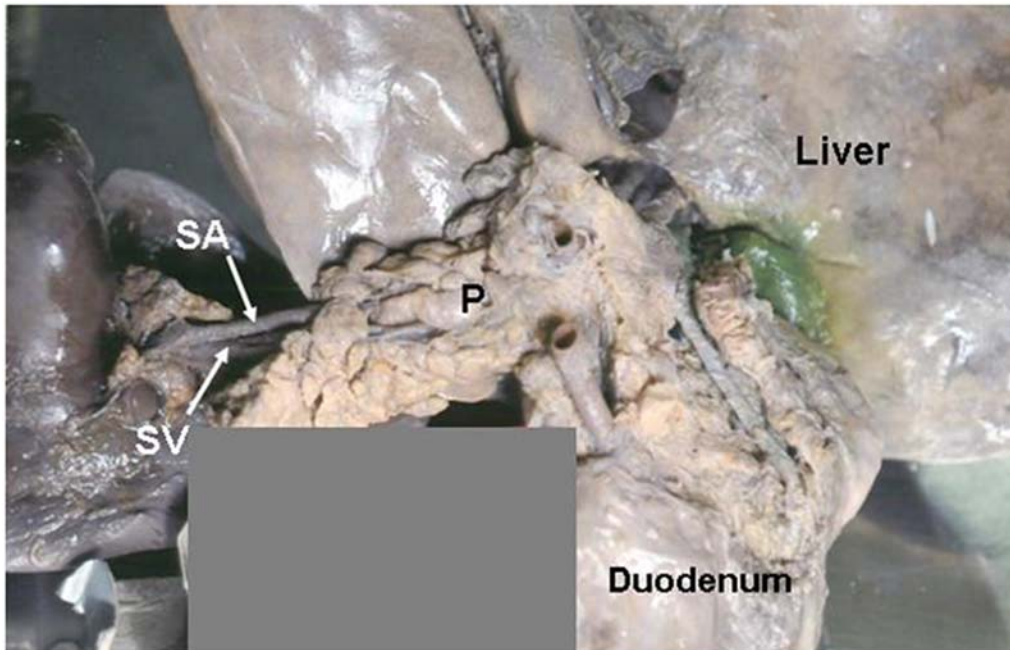


Figure 2. The splenic artery passing through the substance of pancreas

P – pancreas;
SA – splenic artery;
SV – splenic vein

tions the surgeons normally incise the second part of the duodenum, but in cases like the present report the surgeon will miss the ampulla.

Anatomic abnormalities associated with the opening of biliary system into the upper gastrointestinal tract have been increasingly recognized after more widely utilization of ERCP in clinical practice.^{10,11} Obviously the site of entrance of the common bile duct into the duodenum becomes of great importance to the surgeon and to the radiologist in diseases of the extrahepatic biliary tract both diagnostically and therapeutically.

A splenic artery normally originates from the celiac trunk. Occasionally the splenic artery may arise from the aorta or the superior mesenteric artery, and a double splenic artery may rarely form.¹² However, splenic artery passing through the pancreas is a rare occurrence. In the present case the splenic artery was passing through the substance of pancreas, the pulsations of the artery within the pancreas can effect the secretions of the gland.^{12,13}

REFERENCES

1. Standring S. Gray's anatomy. 40th ed. London: Elsevier Churchill Livingstone. 2008. p. 1178.
2. Lindner HH, Pena VA, Ruggeri RA. A clinical and anatomical study of anomalous terminations of the common bile duct into the duodenum. *Ann Surg.* 1976;184(5):626-32.
3. Lurje A. The topography of the extrahepatic biliary passages. *Ann Surg.* 1937; 105:161.
4. Doty J, Hassal E, Fonkalsrud EW. Anomalous drainage of the common bile duct into the fourth portion of the duodenum. *Arch Surg.* 1985;120:1077-79.
5. Quintana EV, Labat R. Ectopic drainage of the common bile ducts. *Ann Surg.* 1974;180:119-23.
6. Kubota T, Fujioka T, Honda S, Suetsuna J, Matsunaga K, Terao H. The papilla of Vater emptying into the duodenal bulb. Report of two cases. *Jpn J Med.* 1988;27:79-82.
7. Schulenberg CAR. Anomalies of the biliary tract as demonstrated by operative cholangiography. *Med Proc.* 1970;16:351.
8. Keddie NC, Taylor AW, Sykes PA. The termination of the common bile duct. *Br J Surg.* 1974;61:623.
9. Lindner HH, Pena VA, Ruggeri RA. A clinical and anatomical study of anomalous termination of the common bile duct into the duodenum. *Ann Surg.* 1976;184:626-32.
10. Gomez CM, Dumonceau JM, Marcolongo M, de Santibanes E, Ciardullo M, Pekolj J, Palavecino M, Gadano A, Dávalos J. Endoscopic management of biliary complications after adult living-donor versus deceased-donor liver transplantation. *Transplantation.* 2009;88(11):1280-85.
11. Katsinelos P, Chatzimavroudis G, Fasoulas K, Katsinelos T, Pilpilidis I, Lazaraki G, Terzoudis S, Kokonis G, Patsis I, Zavos C, Kountouras J. Double major papilla of Vater - a rare endoscopic finding during endoscopic retrograde cholangiopancreatography: a case report. *Cases J.* 2009;2:163.
12. Kupic EA, Marshall WH, Abrams HL. Splenic arterial patterns angiographic analysis and review. *Invest Radiol.* 1967;2:70-98.
13. Rickes S, Monkemuller K, Venerito M, Malfertheiner P. Pseudoaneurysm of the splenic artery. *Dig Surg.* 2006;23(3):156-8.