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Case Report

Anatomy Section

Unusual Course of Splenic Artery: A Case Report

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ABSTRACT

Splenic artery is the largest branch from the celiac trunk. It is remarkably tortuous in its course before it enters the hilum of the spleen. During routine dissection of abdomen for undergraduate students in a 60-year-old male cadaver, we observed an unusual course and tortuosity in the splenic artery. Knowledge of such unusual tortuous splenic artery is important in partial or total splenectomy, splenic aneurysum, splenic embolisation and surgeries related to pancreas, stomach.

Keywords: Aneurysum, Celiac trunk, Embolisation, Tortuous

CASE REPORT

During routine dissection of abdomen for undergraduates, we observed unusual course and tortuosity of the splenic artery taking origin from celiac trunk, in a male cadaver aged 60 years in JSS Medical College, Mysore. Celiac trunk was normal giving origin to left gastric, common hepatic and splenic arteries.

The splenic artery after its origin, instead of turning to the left side was passing vertically downwards along the left side of portal vein behind the body of pancreas. After making a loop it ascended up to the superior border of pancreas. Again making another loop above the superior border of pancreas it entered the hilum of the spleen through the splenico-renal ligament. Splenic vein was inferior to splenic artery near the hilum of the spleen later it was anterior to the splenic artery running posterior to the body of the pancreas. In its course splenic artery gave pancreatic branches to pancreas, short gastric arteries and left gastroepiploic artery to stomach. The length of the splenic artery was 9.00 cm. There was slight enlargement of spleen with cirrhosis of liver.

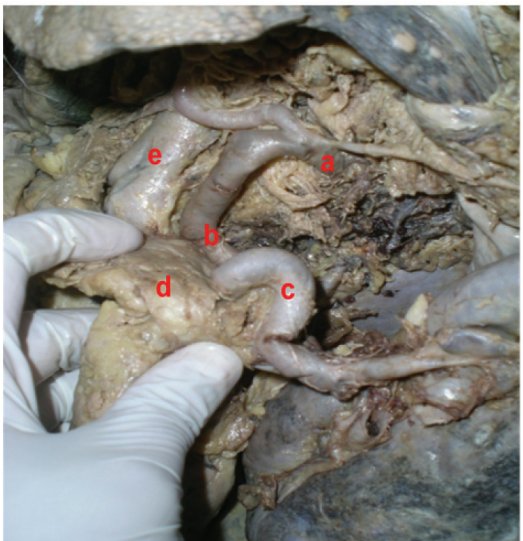
DISCUSSION

Celiac trunk, the artery of foregut normally divides into left gastric, common hepatic and splenic arteries [1]. This classical trifurcation of celiac trunk has been reported by Song et al., in 89.1% cases & Pandey et al., in 90.6% cases [2,3]. The diameter of the splenic artery is larger than that of the hepatic artery in adults [4]. In our present case, though the branching pattern of celiac trunk was normal, but the splenic artery was unusual in its course and tortuosity. Variations in the origin and unusual course are usually asymptomatic but become important in patients undergoing surgical, oncological or interventional procedures.

Splenic artery also called as the lienal artery, is the largest branch of celiac trunk. Branches of splenic artery supply the stomach, pancreas, and spleen. Pandey et al., have reported the origin of splenic artery from celiac trunk in 90.6% of cases. Independent or direct origin of splenic artery from abdominal aorta is rare (1%) [5].

In 1571 Julius Arantius described the “tortuous” course of splenic artery. Sylvester et al., measured the uncoiled (straight) length of the splenic artery (5.8 - 11.3 cm) as well as the variation in tortuosity of the artery [6]. The difference in the increasing length of the artery and the distance between its origin and the splenic hilum makes the artery tortuous. The proximal part of the artery is more tortuous than the distal part [7]. Sindel et al., also reported that the pancreatic segment of the splenic artery is the most tortuous part of

[Table/Fig-1]: Celiac trunk showing unusual splenic artery. 1-Left gastric artery, 2- splenic artery, 3 – common hepatic artery, 4 – pancreas, 5 – splenic vein (red arrow)



[Table/Fig-2]: Pancreas is retracted to show the two loops of splenic artery a – celiac trunk, b – proximal loop, c – distal loop, d – pancreas, e – portal vein

the splenic artery out of the four segments [8]. The average length of the tortuous splenic artery is 9.52 cm. The tortuosity decreases as the diameter of the artery increases [9]. After its origin splenic artery may take suprapancreatic, enteropancreatic, intrapancreatic or retropancreatic course. Out of which suprapancreatic course is commonest (74.1%) and retropancreatic course is rarest (2.8%). In our case, splenic artery was retropancreatic in its course and also presented with a loop, which is also very rare and interesting (0.63%). This loop (proximal loop) was outside the pancreatic tissue not embedded inside the body of pancreas unlike the previous findings reported by Pandey et al., [3]. Most of pancreatic branches were given off by the proximal loop of the splenic artery. Another loop (distal loop) above the superior border of pancreas, gave few short gastric branches to stomach. Left gastroepiploic artery was arising from splenic artery before it entered the hilum of spleen.

Knowledge of variation in the course is important because splenic artery is one of the common site for splanchnic arterial aneurysm after aorta and iliac arteries in the abdomen, rupture of this may result in life threatening complications and also during surgeries related to spleen [10]. Neither the tortuous course nor calcification of splenic artery can cause aneurysm. Calcifying atherosclerosis of the splenic artery has been reported similar to sclerosis of the peripheral arteries in diabetic and dialysis patients [7].

Splenic artery embolisation is done in cases of partial or total splenectomy and blunt injuries of spleen. In this procedure, it is very important to introduce the embolising agents distal to the origin of pancreatic branches to avoid the risk of pancreatitis [10,11]. Therefore, a detailed knowledge of the course of splenic artery and its branches is required to achieve safe embolisation. Similarly careful administration of drugs to splenic artery is essential in neoplastic diseases of splenic parenchyma in order to prevent complications like pancreatic abscess and pancreatitis [12].

CONCLUSION

Splenic arterial interventions are done to treat various clinical conditions like abdominal trauma, splenic arterial aneurysm, portal hypertension, liver perfusion in liver transplantation and to administer drugs in neoplastic disease in the splenic parenchyma. So it is very essential to know the unusual course and tortuosity of splenic artery.

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