EUROPEAN JOURNAL OF BIOMEDICAL AND PHARMACEUTICAL SCIENCES
http://www.ejbps.com

ISSN 2349-8870
Volume: 9
Issue: 6
357-359
Year: 2022

ANATOMICAL VARIATION OF THE SPLENIC ARTERY: A CASE REPORT

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Article Received on 16/04/2022 **Article Revised on 06/05/2022** **Article Accepted on 26/05/2022**

ABSTRACT
Spleen is the largest lymphatic organ which is supplied only by the splenic artery which is the largest branch of celiac trunk in adults and is the second largest next to common hepatic artery in fetal life. It is tortuous in its course. It gives branches that supplies to the stomach, pancreas, and greater omentum and ends by supplying the spleen via its terminal branches. The splenic artery displays several variations in its origin, course and branching pattern. This study reports the incidence of a variant superior polar and inferior polar artery in a cadaver. Splenic artery before its normal termination, it gave superior polar artery and inferior polar aertery. Knowledge of such variations is significant to successfully achieve surgical, oncologic or any interventional procedures.

KEYWORDS: Splenic artery, Coeliac Trunk.

INTRODUCTION
Spleen is a largest lympatic organ in human being. It is connected to the blood vascular system. It consists of a large encapsulated mass of lymphoid and vascular tissues. The blood supply to the spleen is made by a splenic artery which is a branch of the coeliac trunk.[1]

The spleen is a haemo-lymph organ and belongs to the reticulo-endothelial system. It is supplied only by the splenic artery. The splenic artery is remarkably tortuous, on reaching the hilum of spleen the splenic artery divides into five or more segmental branches which enter the substance of spleen along the trabecular septa. Each segmental artery subdivides into smaller and smaller branches which run through the trabecular septa in the interlobular spaces.[2] Apart from spleen, splenic artery gives branches to pancreas also. Splenic artery gives off 5 to 6 short gastric arteries and the left gastroepiploic artery which supplies the stomach. The branches of splenic artery entering into the spleen through the upper and lower ends of the spleen are called polar arteries i.e., Superior and Inferior polar arteries.[3]

This variation in the branching pattern of the splenic artery can be correlated with its embryological development. The coeliac, superior mesenteric and inferior mesenteric arteries are derived from fusion of the vitelline arteries supplying the yolk sac, and are located in the dorsal mesentery of the gut. These vessels supply the derivatives of the foregut, midgut and hindgut.[4]

MATERIALS AND METHODS
During a routine practical class for the undergraduate students on formalin-fixed cadaver, we noticed a variation in the branching pattern of splenic artery, in the Department of Rachana Sharira (Anatomy), Sri Dharmasthala college of Ayurveda, Hassan.

Following the Cunningham's Manual of Dissection, the abdomen was opened and the anterior abdominal wall was reflected. The Stomach, Right Gastric and the Right Gastroepiploic Vessels were cut through and the Peritoneum was removed to reveal the Coeliac Trunk The splenic artery was traced distally and the terminal branching pattern was noted.[4] Photograph of the same was taken.

Case report
During routine dissection of supracolic compartment of the abdominal cavity, a usual trifurcation of coeliac trunk was appreciated just below aortic hiatus at the level of T12 vertebra and we witnessed normal origin of splenic artery from celiac trunk. Artery was long and excessively tortuous in its course. Its course towards the spleen was almost normal. But, before its termination in the hilum of the spleen, it gave superior and inferior polar arteries.

The superior polar artery entered the substance of spleen at the upper end of splenic hilum, whereas, inferior polar artery through the lower end of the hilum.

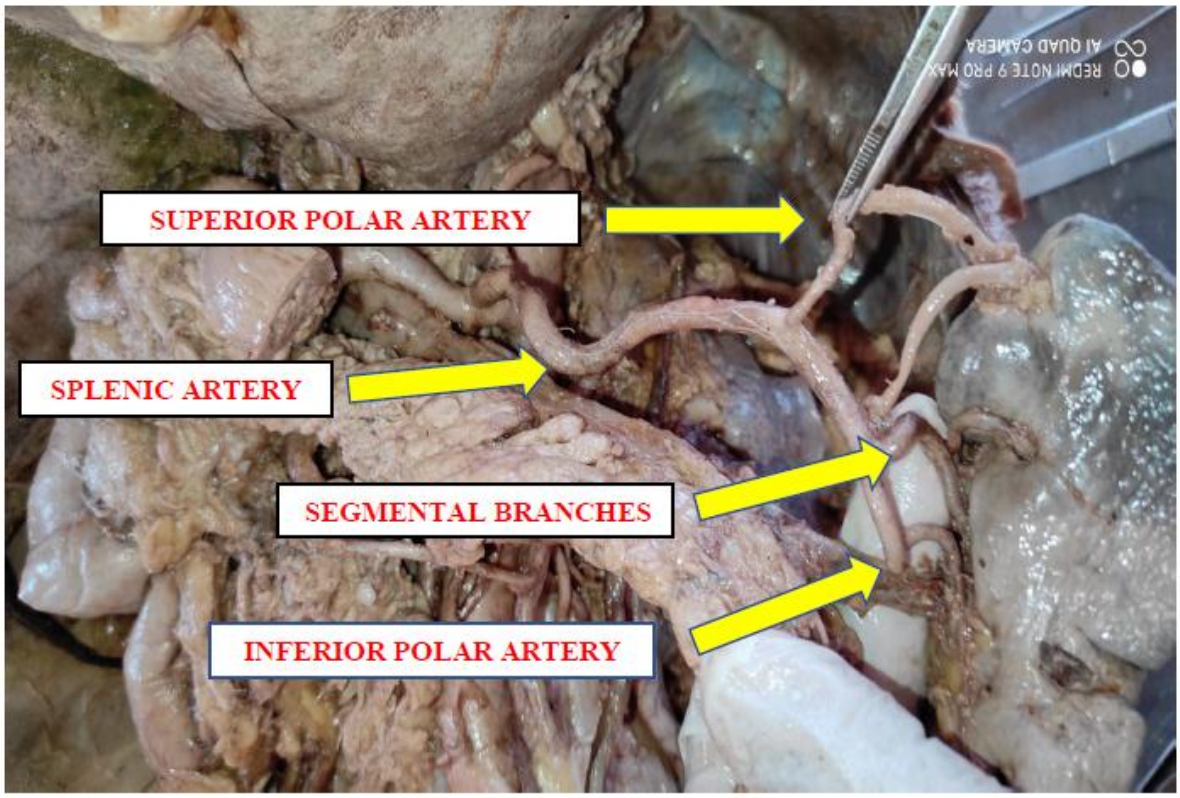

Figure 1: Showing the branching pattern of splenic artery.

DISCUSSION

Spleen is the hemo-lymph organ, receives its arterial source by splenic artery (SA). SA is the largest branch of celiac trunk and tortuous in its course. It normally runs in relation to superior border of body of the pancreas and then passes through the lieno-renal ligament to reach the hilum of spleen and divides into segmental branches.[5] The normal branching pattern of the Splenic artery to spleen facilitates the splenic micro- circulation which is important for the organ to perform its normal function as part of reticulo-endothelial system. Reports on the variant origin of SA are abundant. But, anatomical variations in its branching pattern are very rare.

D. Naga Jyothi, T. V. Ramani were conducted study in 50 embalmed body to observe variations in branching pattern of splenic artery. The branches of splenic artery were identified, and variations in branching pattern were observed and listed below.

Table 1: Classification of branching pattern in splenic artery by D. Naga Jyothi, T. V. Ramani.[6]

Sl. no.	Types of variations	Number of cadaver	observations
01	The short gastric arteries arises from the superior terminal artery.	50	Was seen in 92% cases.
02	The short gastric arteries originated from the left gastro epiploic artery (LGEA).	50	Was seen in 2% cases.
03	The short gastric arteries originated from the inferior terminal arteria of splenic artery	50	Was seen in 14% cases.
04	The posterior gastric artery originated from the splenic artery.	50	Was seen in 36% cases.
05	The left gastro epiploic artery was seen to be originated from	50	Was seen in 84% cases.

	the splenic artery.		
06	The superior polar artery originated from the splenic artery.	50	Was seen in 84% ca s 2015, ses
07	The inferior polar artery was found to be originated from the left gastroepiploic artery.	50	Was seen in 6% cases.

In the present cadaveric dissection, the course of splenic artery towards the spleen was almost normal. But, before its termination in the hilum of the spleen, it gave superior and inferior polar arteries.

CONCLUSION

A comprehensive knowledge of the splenic artery and its variations will prove beneficial in planning various abdominal surgeries and image-guided interventions. In recent times, trends in surgical procedures are to move minimal invasive surgery, therefore we would like to emphasize the importance of thorough knowledge of normal anatomy of splenic artery and its variation in clinical medicine. It will avoid iatrogenic injuries and plays a significant role in surgical management in the abdomen region.

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