

## **VARIATION IN THE CONVERGENCE OF PORTAL VEIN FOUND DURING DISSECTION- A CASE REPORT**

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### **ABSTRACT :**

Liver has two venous system those are portal venous system and hepatic venous system. Portal venous system conveys blood from majority of gastrointestinal tract and hepatic venous system drains blood from liver parenchyma to the inferior vena cava. Portal vein is formed by the union of superior mesenteric and splenic vein begins at the level of 2<sup>nd</sup> lumber vertebrae. In female cadaver of age 55 years old while doing dissection at National Institute of Ayurveda, Jaipur in department of *Sharir Rachana*. We found a variation in the convergence of portal vein.

**Key words:** hepatic, portal, variation

**INTRODUCTION:** The portal (hepatic) system, like all portal venous systems, connects two capillary beds: that of the abdominal part of the digestive tube, with the exception of the lower anl canal but including the abdominal part of the oesophagus, and all organs, except the liver, derived from it (i.e. the spleen, pancreas and gallbladder) and the hepatic sinusoidal 'capillary' bed. The intrahepatic portal vein ramifies like an artery, and ends in sinusoids from which vessels again converge to reach the inferior vena cava via the hepatic veins. In adults, the portal vein and its tributaries have no valves. In fetal life and for a short postnatal period, valves are demonstrable in its tributaries, but they usually atrophy; although some occasionally persist in an atrophic form into adulthood.<sup>1</sup>

**Formation of portal vein:** It is formed by the union of the superior mesenteric and splenic veins behind the neck of pancreas at the level of 2<sup>nd</sup> lumber vertebra.<sup>2</sup>

**Development of portal vein:** The portal vein can thus be divided into infraduodenal, retroduodenal and supraduodenal parts.

1. Infraduodenal part, from a part of the left vitelline vein distal to the dorsal anastomosis.

2. Retroduodenal part, from the dorsal anastomosis between the two vitelline veins.

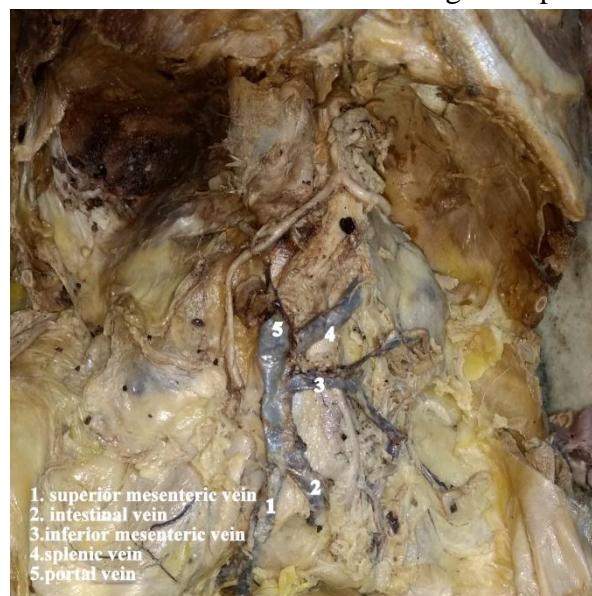
3. Supraduodenal part, from the cranial part of the right vitelline vein.<sup>3</sup>

### **Tributaries of portal vein:**

- Splenic vein
- Superior mesenteric vein
- Left gastric vein
- Right gastric vein
- Superior pancreaticoduodenal vein
- Cystic vein
- Paraumbilical vein<sup>4</sup>

**Possibilities of variation:** Variation usually involve the right portal vein: absence of a right portal vein with the resulting portal trifurcation in the form of left portal vein, right medial and right lateral portal veins, is present in 10-15% of livers. Occasionally the right medial vein arises from the left

portal vein, a variant which is important to remember during left sided liver resection. The portal trifurcation has implications for split liver and liver donor liver transplantation, where its presence might be considered as a relative contra-indication. On rare occasions, the portal bifurcation is absent, in which case the main portal vein enters the liver giving off the right segmental branches and then turns left to supply the left lobe of the liver.



## MATERIALS AND METHODOLOGY:

**Materials:** For literary study:-

1. Available literature regarding portal vein from Modern texts.
2. Research Journals or papers presented on the relevant topics.
3. Confirmed World Wide Web sources.

For cadaveric dissection Study:-

1. Cadaver: female
2. Dissection kit

**Methodology:** The anatomical variation in portal vein was identified during routine cadaveric dissection of a female cadaver of 55 years old embalmed, in the department of

Occasionally one or more of the segmental branches of the right lobe arises proximally.<sup>5</sup>

**Case report:** During routine dissection, variation of portal vein has been found on old female cadaver. Usually portal vein will be formed by the union of superior mesenteric vein and splenic vein in which inferior mesenteric vein will be drained but in this report the inferior mesenteric was directly draining into the portal vein at the level little below the splenic vein without draining into splenic vein.

*Sharira Rachana* of National institute of Ayurveda, Jaipur (Rajasthan). On careful dissection, the portal vein and its tributaries were identified and recorded by using digital camera and photographs were taken.

\*Literature Study: All the information regarding portal vein was collected from modern texts, research journals or papers presented on the relevant topics and authentic internet sources.

**DISCUSSION:** Usually portal vein is made by union of splenic and superior mesenteric vein. Inferior mesenteric vein is drain in to the splenic vein but in this female cadaver

we found variation in portal vein, inferior mesenteric vein is direct drain in to the portal vein.

### **CONCLUSION:**

Anatomical variation of portal vein is relatively common. The study of these variation are important and plays critical role before surgical procedures transplantation and interventional procedure of liver, back of knowledge regarding these can result in complications. These variations are commonly detected during cross-sectional imaging techniques. Usually in routine liver MDCT (multi detector computerised tomography) examination demonstrates portal vein variation. So in order to identity in this procedure the variation has to know thoroughly.

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Declared