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Anatomical dimensions of the portal vein: A cadaver study

The portal vein is formed by union of the superior mesenteric and splenic veins. It lies in front of the inferior vena cava and runs vertically upwards in the free edge of the lesser omentum finally reaching the porta hepatis. In liver transplantation and pancreatectomy, a length of portal vein is removed for anastomose with the recipient vessels. A complete knowledge of the anatomic variations in portal venous anatomy is an essential prerequisite for the outcome of these procedures.

Despite the significance of the portal vein little is known about its dimensions in Sri Lankans. The present study was undertaken to investigate the diameter and length of portal vein in a group of adult Sri Lankan population and to compare the results with other published data. The characteristics of cadavers including age, gender, weight and height were recorded. A total of twenty four apparently healthy livers obtained from cadavers were utilized. The diameter of the portal vein at a predetermined sites and the length up to the porta hepatis were recorded. All measurements were taken using a sliding caliper capable of measuring to the nearest 0.01 mm. Results were expressed as mean \pm SD. Statistical analysis was performed using the t test. P value <0.05 was considered statistically significant.

Portal vein anatomy was normal and mono-pad in all cases studied. The mean diameter of the portal vein at the porta hepatis was found to be 8.96 ± 1.26 mm and the mean length was 8.28 ± 2.33 cm. The results indicated that in our study population, the portal veins are longer but their diameters were smaller than when compared with the reported measurements in the anatomy texts. These may be attributed to racial differences. Precise knowledge of the expected normal portal vein diameter at a given anatomic location is the first step towards developing a quantitative estimate of the severity of the portal vein abnormalities. This study provides a reference data set for adult Sri Lankans against which to compare the diameters of the portal vein in various pathological conditions.