

Histological Organization of the Portal Vein: a Structural Adaptation

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Abstract

The extra hepatic portion of the portal vein has been known to physiologically act as a capacitance vessel while its intra hepatic portion behaves as a resistance vessel. However, the histological basis for these observations has not been clearly defined. The aim of this study was therefore to describe the histological organization of the portal vein in reference to the observed functional differences in its intra- and extra hepatic portions. Sections of the portal vein were harvested from 24 livers during autopsies at the Chiromo funeral parlor, University of Nairobi, Kenya. They were processed for light microscopic histological evaluation. The structure of both portions was then noted and described. The extra hepatic portion had circular, oblique and longitudinal muscle bundles in its tunica intima, media and adventitia respectively. On the other hand, the intra hepatic portion had abundant fibro-elastic fibers with longitudinal smooth muscles scattered in their tunica media and adventitia. From the results of the current study, the functional differences of both the extra-hepatic and intra-hepatic portions of the PV are accounted for by their different histological structures.