

Morphometry of the Hepatic Duct in Human Cadavers

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Human extrahepatic biliary tract consists of right (RHD) and left (LHD) hepatic ducts, common hepatic duct (CHD), cystic duct, common bile duct, and gall bladder. Knowledge of the measurements of these ducts is helpful in both surgical and radiological practice and few are available from Sri Lanka. Objective of this study was to analyze external measurements of human hepatic ducts in preserved Sri Lankan cadavers. This descriptive study was done at Department of Anatomy, Faculty of Medicine, University of Peradeniya. Biliary system in preserved cadavers was dissected and lengths (from origin at hepatic confluence to commencement at union of intrahepatic ducts or cystic duct) and external diameters (2 measurements perpendicular to each other at midpoint of duct, were averaged) of RHD, LHD, and CHD were measured using a calibrated digital vernier caliper. Descriptive analysis and Spearman's rho test for correlation were used. Twenty cadavers (female-60%) with main hepatic duct variants were studied. Mean lengths of RHD, LHD and CHD were 11.7 mm (SD-7.09) (range 6.41-25.6), 13.6 mm (SD-5.46) (range 3.01-25.1) and 23.2 mm (SD-7.68) (range 9.52-41.6) respectively. Mean diameters of RHD, LHD and CHD were 4.16 mm (SD-2.1, 2.265-7.63), 3.77 mm (SD-0.888, 2.05-5.39) and 5.60 mm (SD-1.28, 3.51-8.72) respectively. There was a moderate positive correlation between lengths of RHD and LHD (Spearman's rho=0.303) and diameters of RHD and LHD (Spearman's rho=0.392) however no statistical significance (p for lengths=0.195, p for diameters=0.097) was observed. Among the studied samples, both the highest mean length and diameter were found in CHD. Although there is a moderate correlation between lengths and diameters of RHD and LHD, it is not statistically significant. Our findings vary from some previously reported postmortem data, while similar averages were reported worldwide in few cadaveric/ imaging studies. Values reported here are well within the average ranges reported in literature.

Keywords: Right Hepatic Duct, Left Hepatic Duct, Common Hepatic Duct, Correlation, Morphometry