

5.2 Beware of Variations in Bile Duct and Arterial Anatomy During Laparoscopic Cholecystectomy; An Intr-operative and Cadaveric Study.

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ABSTRACT

Introduction: Comprehensive knowledge, realization of the frequency and multiplicity of abnormalities of the extrahepatic biliary tree are requisites for safe laparoscopic cholecystectomy (LC).

Material and methods: Descriptive-prospective cross sectional study was performed in 200 patients, who underwent LC for symptomatic gall bladder (GB) disease and 60 dissected cadavers, to observe variations in GB, cystic duct (CD), cystic artery (CA) and Calot's triangle. Ethical approval was obtained.

Results: No abnormality was seen in the gallbladder in 258 (99.2%). Two (1 %) Patients, had abnormalities in the gallbladder. Those were septate and bipolar. Four cadavers (6.6 %) had abnormalities of the cystic duct; 2 absent CD, 1 hepato-cystic duct, 2 with two cystic ducts. The cystic duct was seen to form a classical Calot's triangle in 249(96%). In 11, (5(0.25%) patients, 6(10%) cadavers) the CD was abnormal; 8(73%) had flat-horizontal path and 3(27%) were parallel to CBD. The average length of the CD was 3 cm in 47 cadavers. Short (<3cm) and long CD (>3cm) were found in 8/60(13.3 %) and 5/60(8.3 %) respectively.

In 148(57 %) the right hepatic artery (RHA) was medial to the CHD. In 107(41 %), the RHA was in the triangle of Calot's and in 5(patients 2, cadaver 3) the RHA crossed over the CHD. 231(89%) Of the cystic arteries had no variations. In 29(11%) (patients 17, cadavers 12) we found abnormalities; 13(5 %) had two cystic arteries, 13(5 %) cystic arteries were anterior to the CHD and 3(1 %) cystic arteries were anterior to cystic duct.

Conclusion: The biliary and hepatic arteries had significant variations whilst gallbladder and cystic duct positions were relatively constant in laparoscopic cholecystectomy. Awareness of the variations in the extra hepatic biliary system and related vasculature will prevent the iatrogenic injury.