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## The Significance Of Preoperative Cholangiogram For Avoiding Bile Duct Injury In Laparoscopic Cholecystectomy

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**Background :** Despite the development of various surgical equipment and technique, iatrogenic bile duct injury (BDI) is one of the most dreadful complication of laparoscopic cholecystectomy (LC). Evidence has suggested that visual misperception accounts for 97% of BDI and aberrant right posterior sectoral hepatic duct (aPHD) is the most common and most vulnerable to BDI. This study aimed to analyze the frequency of each type of variation and efficacy of preoperative imaging of bile duct anatomy.

**Methods :** From March 1, 2017 to February 28, 2021, 1477 patients who underwent cholecystectomy at Wonkwang University Hospital were enrolled. Among them, images of the 1429 patients were analyzed with magnetic resonance cholangiopancreatography (MRCP), endoscopic retrograde cholangiopancreatography (ERCP), and cholangiography using catheter via percutaneous or nasobiliary routes, selectively. Then, the types of patients confirmed to have aPHD were classified and analyzed for the presence of BDI.

**Results :** Of the 1429 patients, 123 patients (8.61%) were found to have aPHD, of which 7 patients (0.49%) were type I, 14 patients (0.98%) were type II, 84 patients (6.97%) were type III, 2 patients (0.14%) were type IV, 7 patients (0.49%) were type IV, 9 patients (0.63%) were miscellaneous type, respectively (Fig. 3). BDI occurred in 3 patients out of 1429 patients (0.21%), and among 123 patients with aPHD, there was only a case of transected aPHD during dissection of posterior wall of gallbladder.

**Conclusions :** It is useful to perform preoperative examination using MRCP, ERCP, cholangiography to reduce BDI through accurate understanding of the anatomy of the biliary tract before laparoscopic cholecystectomy.

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