Operative Cholangiograms: A Proposed Scoring System and Operator Variability

Dr Mei Ping Melody Koo & Dr Hansraj Riteesh Bookun,
St Vincent's Hospital Melbourne, VIC 3000, Australia

Abstract

Background:

Intraoperative cholangiogram (IOC) is an integral part of cholecystectomy by reducing and improving recognition of bile duct injuries. Its interpretation is often self-taught. We describe here our proposed scoring system to aid interpretation and the impact of the operator in our review of 3573 IOCs

Methods: A group of 9 surgeons and 3 radiologists were surveyed to generate a list of 8 essential elements of an adequate IOC. Data collection spanned a 5-year period (01/01/2014 to 31/10/2019). Data collection was performed by 6 clinicians with good inter-observer agreement (Fliess-Kappa score of 0.79). A scoring system ranging from 0 to 8 was devised to rate the quality of an IOC across operator types (registrar, upper GI Surgeon and General Surgeon) via an analysis of variance.

Results: The 8 elements selected by the scoring panel were: cystic duct, intra-hepatic ducts, proximal bile duct, distal bile duct, flow to duodenum, absence of leak from cystic duct, absence of artefacts on the captured image and an image showing bile duct off the vertebral column, with 43% of our examined IOCs fulfilling these criteria.

3573 IOCs were performed with 2355 patients being female. The mean age was 50+/-18 years, with cholecystitis being the most common diagnosis. The mean score of the quality of IOC was 6.4+/-1.1. There was no statistically significant difference in mean score between the different operator types (registrar 6.37, upper GI surgeon 6.36, general surgeon 6.33).

Conclusions: IOC capture and interpretation is not currently standardised. High quality cholangiograms can be obtained, irrespective of operator type in suitably supervised environments with credentialled surgeons in the lead.

References:

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Biography

Dr Koo is a resident at the St Vincent's Hospital in Melbourne with a keen interest in surgical techniques, education and heuristics.

Email: melodykmp@gmail.com

Presenting author details
Full name: Dr Mei Ping Melody Koo
Contact number: +61423681644
Category: Oral presentation