M-AS 2

Fluorescence-imaging in HPB surgery

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Lecture : Fluorescence guided HPB surgery using ICG is fast becoming a standard in HPB surgery. This has gained popularity in the last decade due to its great potential in various applicability unique to the hepatobiliary system and it's complicated nature of surgery. A few seconds after the intravenous injection of ICG, a homogenous fluorescent pattern will be observed on the liver. This is the early hepatic phase. 15 to 30 mins later, fluorescent cholangiography will be visible and this is the called the biliary phase. Finally, in the late hepatic phase, fluorescent pattern either in the liver nodule or surrounding the nodule will be evident depending on the parenchymal characteristic of the liver. A cirrhotic liver will manifest high intense fluorescent illumination even after a few days after intravenous administration of ICG. Thus, these various patterns reveal the nature of the nodules and may help in liver tumor identification and when administered during the same operating period after isolation of hepatic pedicles, this can be a good tool to allow liver segmentation visualisation. This aids in performing anatomical resection for the liver.

Incisionless cholangiography by ICG have demonstrated to be a very good tool in identifying the extra hepatic biliary which can mitigate bile duct injury especially when there is anatomical variation. Our series identified the biliary tree in 100% of our patients. 48% were identified before dissection and 52% were identified while clearing the cystic plate and identifying the CVS. Fluorescence in HPB surgery inevitably is a good practice that should be encouraged.