

## LV SY 2-2

### Laparoscopic anatomical liver resection: Simulation by 3D reconstruction and navigation by ICG fluorescent images

Ji Hoon Kim

Center for Liver and Pancreatobiliary Cancer, National Cancer Center, Korea

**Lecture :** The recent development of technology facilitates surgeon to help understand liver anatomy and to perform effective and safe liver surgery. Theoretically, anatomic liver resection has the advantage of completely removing the original tumor as well as any nearby liver tissue that has micrometastases and is located near the portal tributaries.

Three-dimensional (3D) reconstruction images based on the abdominal CT help surgeon to display, characterize, and understand the 3D anatomy and morphological characteristics of the liver. It has become more important in the preoperative simulation in planning hepatectomy.

Indocyanine green (ICG) is a fluorescent dye that has been widely used for fluorescence imaging during hepatobiliary surgery. The fluorescence properties of ICG permit a wide range of visualization methods in hepatobiliary surgery. applications of ICG during hepatobiliary are as follows: 1) tumor localization 2) intersegmental plane 3) cholangiography. Laparoscopic anatomical liver resection using ICG fluorescence imaging is a feasible and useful procedure for resection of the tumor-bearing hepatic region and facilitates visualization of the demarcation line and identification of the boundaries of the hepatic sections.

I would like to present and introduce laparoscopic anatomical liver resection using preoperative simulation by 3D reconstruction images and intraoperative navigation by ICG fluorescent images.