

## **The Importance of the Glissonean Approach and Laennec Capsule Concept in Open Anatomical Liver Resections: What we Need to Know**

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### **ABSTRACT**

The Glissonean pedicle approach in liver surgery provides new knowledge of the surgical anatomy of the liver and advances the technique of liver surgery. Extrafascial dissection of Glissonean pedicle without opening the liver substance, proposed by Takasaki, represents an effective and safe technique of anatomic liver resection. Presented approach allows early and easy ischemic delineation of appropriate anatomic liver territory (hemiliver, section or segment) to be removed with selective inflow vascular control. It is not time consuming and it is very useful in re-resection, as well as oncological reasonable. According to the Sugioka's proposal, for technical standardization, it is important to recognize the four anatomical landmarks; the Arantius plate, the umbilical plate, the cystic plate and the Glissonean pedicle of the caudate process (G1c), and six Gates defined by the four anatomical landmarks. For the right extrahepatic Glissonean pedicle isolation, the cystic plate cholecystectomy should be the first procedure, whereas for the left, Arantius plate or the umbilical plate should be detached from Laennec's capsule at first. Pedicles can be isolated by connecting Gates each other. Further peripheral pedicles could be pulled out to the hepatic hilum and transected safely. In conclusion, the extrahepatic Glissonean pedicle approach based on Laennec's capsule would standardize anatomical liver resection including laparoscopic and robotic liver resection.

**Key words:** anatomical liver resection, Glissonean approach, Laennec's capsule, extrafascial dissection