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ORIGINAL ARTICLE – HEPATOBILIARY TUMORS

Indocyanine Green Compression Technique for Anatomical S8 Dorsal Subsegmentectomy for Hepatocellular Carcinoma

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ABSTRACT

Background. Anatomical resection (AR) is a recommended surgical treatment for hepatocellular carcinoma (HCC), although the conventional procedure (dye injection) for AR is difficult to reproduce.[1,2] The tumor-feeding portal pedicle compression technique has been proposed as an easy, reversible, repeatable, and oncologically suitable procedure,[3–5] and its only drawback is the sometimes faint discoloration of the compressed area. For enhancing its visibility, indocyanine green (ICG) fluorescence imaging has been introduced. This technique is herein disclosed while performing an anatomical S8 dorsal subsegmentectomy.

Methods. A 66-year-old male was admitted for a 3.7 cm HCC in segment 8 dorsal (S8d) grown in non-alcoholic steatohepatitis. The preoperative liver function was graded as Child–Pugh class A. After adequate liver mobilization, the subsegmental Glissonian pedicle to S8d was identified by intraoperative ultrasound (IOUS) and compressed transparenchymally between the probe and the surgeon's fingertip positioned at the opposed side of the liver. Once IOUS-guided vessel compression had begun, ICG was administered intravenously. The compressed vessel created a non-stained area, which was marked using electrocautery.

Results. An anatomical S8d subsegmentectomy using the ICG compression technique was performed. There was no congested area and the right hepatic vein was exposed at the hepatocaval confluence because the resection was conducted in a subsegmental fashion. There was no morbidity and no blood transfusions were necessary. The patient was discharged on day 6 after surgery.

Conclusions. This video shows, for the first time, the finger compression technique successfully implemented by ICG imaging for performing an AR for HCC.

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DISCLOSURE Fabio Procopio, Matteo Cimino, Guido Costa, Bruno Branciforte, Dario Poretti, and Guido Torzilli have no conflicts of interest to declare.

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