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## Robotic Liver Resection Of Segment I With 3-D Rendering And Intraoperative ICG-fluorescence For Giant Hemangioma

**Gianluca CASSESE\***, Roberto MONTALTI, Roberto Ivan TROISI

*Minimally Invasive And Robotic Hpb Surgery And Transplantation Service, Federico II University Hospital, ITALY*

**Background** : Resection of segment 1 (S1) is considered a challenging surgical procedure, even for experienced surgeons. This is mainly due to its particular independent anatomical position, lying on the inferior vein cava (IVC), behind main and left portal veins (PV), below the hepatic veins. Few reports exist about the safety of robotic liver resection of S1.

**Methods** : A 43 years old male patient came to our attention because of a radiological finding of a giant hemangioma of the liver. The imaging was performed to investigate the causes of a persistent dyspepsia. Pre-operative CT-scan showed a giant hemangioma (maximum diameter of 12cm) that totally replaced the Spiegel lobe, causing hypotrophy of the left lobe of the liver. The patient was followed during 18 months period at our outpatient clinic to monitor his complains eventually confirming the surgical indication. A pre-operative 3D-rendering was built to deeply investigate the relationships between the lesion and the surrounding vascular structures. In the light of the exophytic nature of the lesion, an atypical resection of segment 1 with robotic approach was planned.

**Results** : The patient was placed in supine position, with 15° anti-Trendelenburg inclination. First umbilical trocar was inserted for the assistant surgeon, and four trocars were placed in a linear shape for the Da Vinci Xi platform. After an abdominal exploration, the gastro-hepatic ligament was opened to expose the Spiegel lobe. An intracorporeal Pringle maneuver was prepared. The hemangioma was carefully isolated and dissected with a left and caudal approach from the liver hilum. The small portal and arterial branches for the segment 1 were secured with titanium clips and cut. ICG-fluorescence was then i.v. administered to check the ischemic margins with a negative counterstaining. The transection was carried out by using a harmonic scalpel. The short hepatic veins were secured and cut. The specimen was retrieved in a vinyl bag through a Pfannenstiel incision. Estimated blood loss were nihil. The postoperative period was uneventful, and the patient was discharged on the 3rd POD.

**Conclusions** : A robotic liver resection can be safely and successfully performed for lesions located in S1, in selected cases. Recent technological advances can help the minimally invasive surgeon and be useful to reach improved outcomes.

Corresponding Author : **Gianluca CASSESE** (gianluca.cassese91@gmail.com)