First Case of Full Robotic ALPPS for Intrahepatic Cholangiocarcinoma

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ABSTRACT

Background. Associating liver partition and portal vein ligation for staged hepatectomy (ALPPS) for intrahepatic cholangiocarcinoma (ICC) demonstrated good long-term outcomes¹ and can increase the rate of resectability in locally advanced ICC;² however, the rates of postoperative complications (Clavien–Dindo grade III) and mortality range between 13.6 and 44% and 0 and 29%, respectively.³ Minimally invasive strategies may reduce the risk of postoperative morbidity, with the same oncologic outcomes.^{4,5} We report the first case of full robotic ALPPS for advanced ICC.

Methods. The patient was a 61-year-old male diagnosed with a 6.5 cm ICC involving segments IV, V, and VIII. The total clean liver volume was 1553 cc³, with a future liver remnant (FLR) volume of 21.6% (segments I, II, and III: 337 cc³). The procedure was performed by a senior hepato-pancreato-biliary (HPB) surgeon at the robotic console and a junior HPB surgeon at the table side.

Results. Computed tomography scan on postoperative day (POD) 9 after stage 1 showed that FLR increased up to 38%. The indocyanine green clearance test showed a plasma disappearance rate of 19.8%/min and a retention rate at 15 min of 5.1%; complete blood tests are available at the end of the video. ALPPS was completed on POD 14, the postoperative course was uneventful, and the patient

was discharged in good general condition on POD 5. Final pathology showed a 6 cm ICC, G3, R0 margin (10 mm), T2–N0–M0. The patient started adjuvant capecitabine, and after 6 months was in good general condition without signs of local or systemic recurrence.

Conclusions. Robotic ALPPS combines the opportunity to perform a curative resection in patients presenting with insufficient FLR with the advantages of a minimally invasive approach. It is feasible and oncologically accurate for ICC when performed in fully trained HPB centers.

DISCLOSURES Fabrizio Di Benedetto and Paolo Magistri declare no conflicts of interest.

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