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ORIGINAL ARTICLE – HEPATOBILIARY TUMORS

Robotic Partial Segment VIII Resection

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BACKGROUND

Robotic partial hepatectomy is an important tool for the treatment of colorectal liver metastases, offering the benefits of a minimally invasive approach with advanced wristed motion, precision, and dexterity. We demonstrate the steps of a robotic partial hepatectomy with specific emphasis on instruments, techniques, and the role of cross-sectional imaging and ultrasound in guiding a margin-negative resection.

PATIENT

A 66-year-old woman presented with a solitary segment VIII liver metastasis 5 years after laparoscopic right hemicolectomy for a T2N0M0 adenocarcinoma. After multidisciplinary tumor board discussion, the decision was made to proceed with resection of her oligometastatic disease following neoadjuvant chemotherapy.

TECHNIQUE

After laparoscopic survey, the robotic platform was docked and ultrasound demonstrated the solitary metastatic lesion. Consistent with CT imaging, the V8 branch of the middle hepatic vein lay deep to the tumor and would serve as our deep margin. The liver was mobilized, a Rummel tourniquet using a 24-FR chest tube was placed around the porta hepatis, and resection borders were demarcated using the 1-cm wide probe as a guide to ensure adequate margins. The capsule was incised and hepatic parenchyma divided with bipolar energy. After the first centimeter, a crush-clamp technique was used to safely identify larger structures that were ligated with endoscopic clips. Final pathology confirmed widely clear margins. She was discharged home on postoperative day 1.

CONCLUSIONS

Robotic partial hepatectomy can be safely performed with the described technique. Reliance on cross-sectional imaging landmarks and liberal use of intraoperative ultrasound are helpful to achieve R0 resection.

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