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Pure Single-port Robotic Left Lateral Sectionectomy Using The Da Vinci SP System

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Background : Since its first appearance in the early 1990s, laparoscopic hepatic resection has become increasingly accepted and recognized as safe as laparotomy. The recent introduction of robotic surgery systems has brought new innovations to the field of minimally invasive surgery, such as laparoscopic surgery. The da Vinci line of surgical systems has recently released a true single-port platform called the da Vinci SP system, which has three fully wristed and elbowed instruments and a flexible camera in a single 2.5 cm cannula. We present the first case of robotic liver resection using the da Vinci SP system and demonstrate the technical feasibility of this platform.

Methods : A 63-year-old woman presented with elevated liver function test results and abdominal pain. Computed tomography (CT) and magnetic resonance cholangiopancreatography showed multiple intrahepatic duct stones in the left lateral section and distal common bile duct (CBD) stones near the ampulla of Vater.

Results : The docking time was 8 min. The patient underwent successful da Vinci SP with a total operation time of 135 min. The estimated blood loss was 50.0 ml. No significant intraoperative events were observed. The numerical pain intensity score was 3/10 in the immediate postoperative period and 1/10 on postoperative day 2. The patient was discharged on postoperative day 5 after verifying that the CT scan did not show any surgical complications.

Conclusions : We report a technique of left lateral sectionectomy, without the use of an additional port, via the da Vinci SP system. The present case suggests that minor hepatic resection is technically feasible and safe with the new da Vinci SP system in select patients. For the active application of the da Vinci SP system in hepatobiliary surgery, further device development and research are needed.

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