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Session : Postgraduate Course 3 (Liver)

Date & Time, Place : November 16 (Thu), 10:30-12:00, Room 3F-1

Session Title : How do I do (Lap/Robotic RL): Parenchymal division & BD division

Methods for parenchymal transection and bile duct division in robotic donor right hepatectomy

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Robotic liver surgery is emerging as the future of minimally invasive surgery, overcoming the disadvantage of laparoscopy. During minimally invasive donor hepatectomy, the parenchymal transection and bile duct resection constitutes a fundamental aspect of the procedure. Inadequate sealing of vascular and biliary structures can result in bile leakage or bleeding, potentially causing postoperative complications and mortality. Several techniques and devices have been developed for parenchymal transection during minimally invasive liver resection, such as the clamp crushing technique, cavitron ultrasonic surgical aspirator (CUSA), ultrasonic devices, staplers and mono- and bipolar devices. However, for robotic surgery, it has not yet been determined which device is best suited for parenchymal transection. The two biggest barriers to the uptake of robotic donor hepatectomy may be the high cost and instrument limitations, of which how to transect the liver parenchyma and bile duct division are the main issues in the robotic donor hepatectomy. Moreover, a cavitron ultrasonic surgical aspirator (CUSA), mainly used in open and laparoscopic hepatectomy, cannot be used in the robot console effectively. also, intraoperative cholangiography is not available during bile duct division using robotics. Currently, the robotic Harmonic Scalpel (Intuitive Surgical, Sunnyvale, California, USA) with robotic bipolar cautery (Maryland Bipolar Forceps, Intuitive Surgical, Sunnyvale, California, USA) are the most frequently reported devices used for parenchymal transection during robotic liver resection. ICG is the most useful effective technique for bile duct division using robotics. From June 2019 to December 2022, 53 various robotic hepatectomy for liver diseases and live donor were performed at Dong-A University Hospital. 39 of 53 were classified as major hepatectomies. 18 of 53 were robotic donor right hepatectomies. Fortunately, there were no open conversations and major complications among the 18 cases. Here, we are going to share the method of using robotic Harmonics ultrasonic shears for parenchymal transection and of using ICG for bile duct division during robotic donor hepatectomy.