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VIDEO FORUM

Ultrasound-guided identification of superior mesenteric vein in robotic complete mesocolic excision for right colon cancer

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The principle of complete mesocolic excision (CME) with central vascular ligation (CVL) for colon cancer has not been widely adopted due to concerns about increased morbidity and technical difficulties [1]. One of the challenges in CME surgery is the identification of the superior mesenteric vein (SMV) at the start of dissection and this is even more difficult in obese patients. A detailed knowledge of the anatomy is absolutely necessary [2], but the robotic platform can provide good views, access and the use of technology like intraoperative ultrasound to facilitate this step. Intraoperative Doppler ultrasound has been previously used for the identification of inferior mesenteric artery branches [3]. The procedure is shown in the attached video.

The patient was a 68-year-old female with a body mass index of 28 kg/m^2. She had a robotic CME for an ascending colon cancer (T3N1).

A medial to lateral approach is performed for CME and CVL. Port placement is represented in Fig. 1. The first step is the identification of the SMV, which is facilitated by the use of an ultrasound probe. The ultrasound view is seen in tilepro vision at the surgeon's console (Fig. 2). The probe is placed through a 10 mm port and controlled robotically. It is used to mark the line of SMV with diathermy. Then, an incision is made exactly at that level to approach the SMV directly, extending up to the middle colic vessels. The procedure continues with dissection of the vessels alongside the SMV (ileocolic, right colic and middle colic vessels) (Fig. 3).

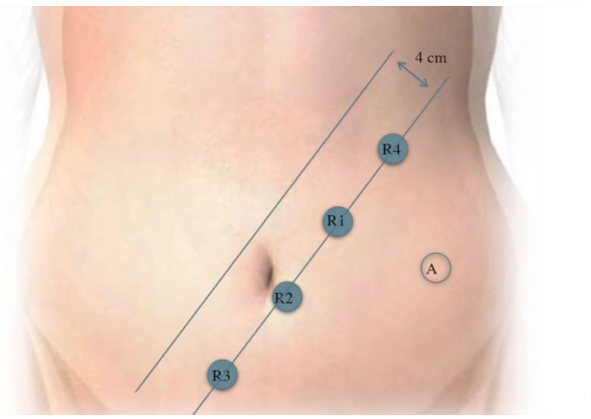

Fig. 1 Configuration of the ports with the Da Vinci X system. R1 first robotic port, R2 second robotic port (optical port), R3 third robotic port, R4 fourth robotic port, and A1 assistant port

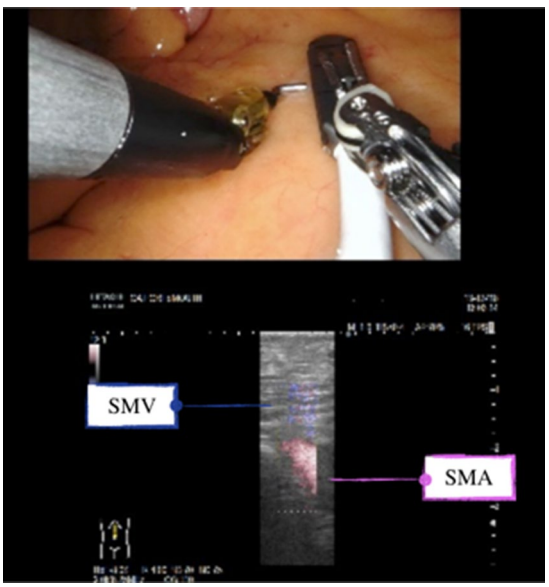

Fig. 2 Intraoperative views during a right hemicolectomy with CME and CVL procedures. Robotic ultrasound probe for identifying the SMV

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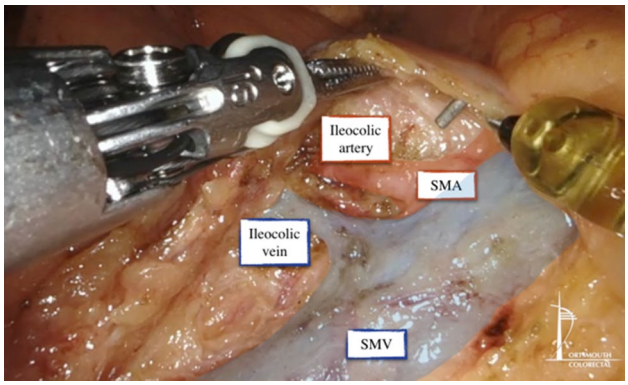

Fig. 3 Intraoperative views during a right hemicolectomy with CME and CVL procedures. Dissection along the SMV

Total operative time was 180 min, including 60 min for CVL. There were no complications and the patient was discharged after 3 days.

CME is a technically challenging procedure. Lymphadenectomy along the SMV can be facilitated with the use of a robotic platform, including intraoperative ultrasound.

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Compliance with ethical standards

Conflict of interest The authors have no conflict of interest.

Ethical standards All the procedures performed in studies involving humans were in accordance with ethical standards of the institutional research committee and the 1964 Helsinki Declaration and its later amendments.

Informed consent Informed consent was obtained from all the participants.

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