



Transperineal extralevator abdominoperineal excision performed by double laparoscopic approach with no position change

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Background: The aim of this study was to assess the feasibility of such an approach and to appraise short-term outcomes.

Methods: The abdominal phase and perineal phase of the operation were both performed laparoscopically simultaneously. All patients were enrolled in an enhanced recovery programme.

Results: The conversion rate to laparotomy was 0%. All patients had circumferential resection margins (CRM) >1 mm; no intraoperative tumour perforation (IOP) occurred. The median length of stay was 8 days.

Conclusions: Double laparoscopic-assisted extralevator abdominoperineal excision (ELAPE) can be safely performed without compromising short-term outcomes.

Keywords: Abdominoperineal excision (APE); double laparoscopic approach; rectal cancer

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Introduction

Conventional abdominoperineal excision (APE) for low rectal cancer is associated with higher rates of circumferential resection margin (CRM) involvement (1), intraoperative tumour perforation (IOP) and local recurrence and leads to poorer survival when compared with anterior resection. In response to these concerns, Holm *et al.* (2) emphasized the importance of full removal of the pelvic floor. Extralevator abdominoperineal excision (ELAPE) or cylindrical APE aims to improve the oncological outcome through removal of increased tissue in the distal rectum and *en bloc* excision of the levator ani. This creates a cylindrical surgical specimen without a waist and is associated in early reports with reduced CRM involvement, IOP and local recurrence compared with conventional APE.

The technique of ELAPE has been described with the

patient in the prone jackknife position and a myocutaneous flap is used to repair the pelvic defect. The operation has the disadvantages of a long operation time, greater trauma, and requiring the assistance of a plastic surgeon. Laparoscopic colorectal resection is now widely established and its benefits and safety have been extensively reported (3). To simplify the operation, we have been performing ELAPE with transperineal ELAPE performed by double laparoscopic approach without a change of the position of the patient.

Patient selection and pre-operative preparation

Patients with tumours located within 5 cm of the anal verge were treated with ELAPE procedures. This decision was confirmed at a multidisciplinary team meeting after

the surgeon had reviewed the patient, confirmed tumour location with MRI and discussed surgical options with the patient (ultra-low AR *vs.* ELAPE in those patients with a tumour at approximately 5 cm).

The patients had preoperative bowel preparation the day before surgery. Prophylactic antibiotics were administered before the incision.

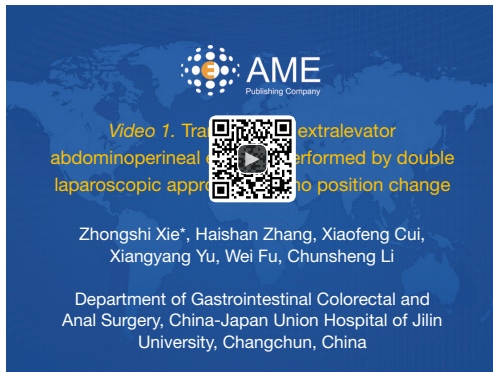


Figure 1 Transperineal extralevator abdominoperineal excision performed by double laparoscopic approach with no position change (4). Available online: <http://www.asvide.com/articles/1266>

Procedure (Figure 1)

A standardized surgical procedure was performed by two experienced rectal cancer surgeons, working simultaneously throughout the whole procedure (Figure 2).

Abdominal approach

The patients were placed in the Trendelenburg and right lateral tilt position.

Port distribution was as follows: a 10-mm umbilical port together with a 30-degree teleangle scope inside (2D EndoEYE 10 mm video laparoscope, Olympus KeyMed), a 10-mm port at the planned right iliac fossa, two 5-mm ports inserted in each flank, and the last 10-mm port at the planned left sided colostomy site (Covidien, Mansfield, MA, USA). A high tie of the inferior mesenteric vessels (Lapro-Clip, Covidien, Mansfield, MA, USA) (Figure 3) and a complete mobilization of descending-sigmoid colon were performed. ELAPE was performed according to the description by Holm *et al.* (2) with the abdominal portion involving laparoscopic mobilization of the mesorectum as far down as the origin of the levator ani muscles. This level

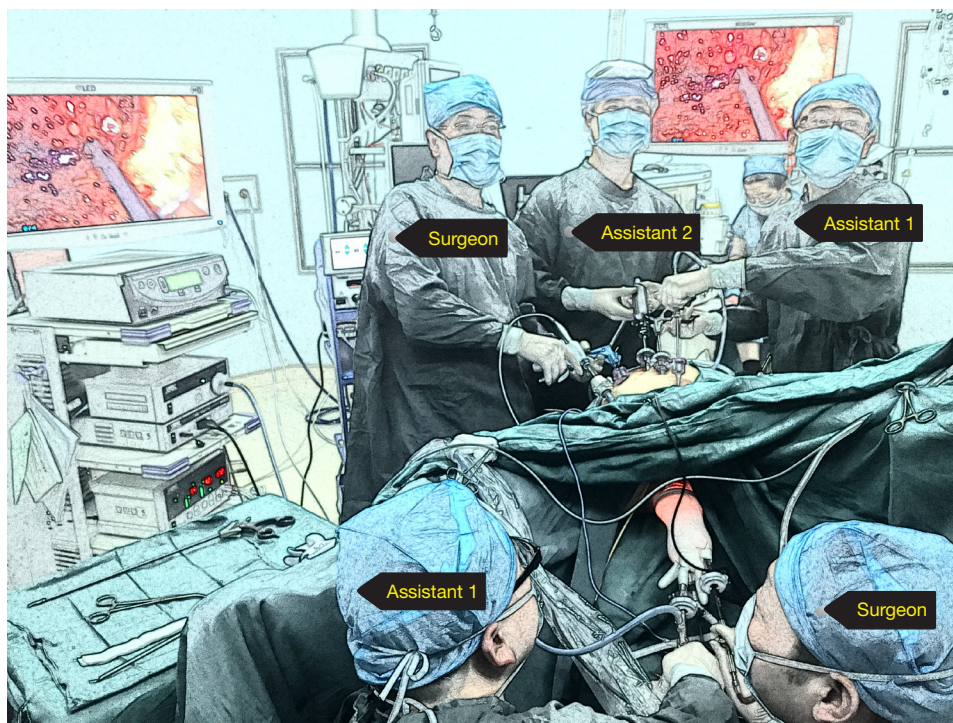


Figure 2 Two team work simultaneously.

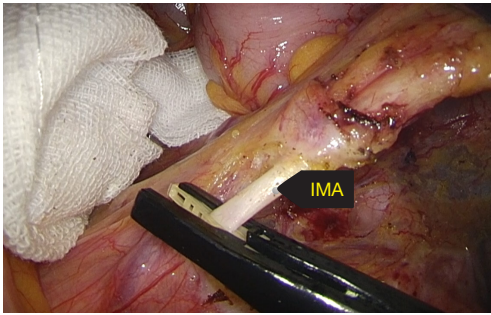


Figure 3 High tie of the inferior mesenteric vessels.

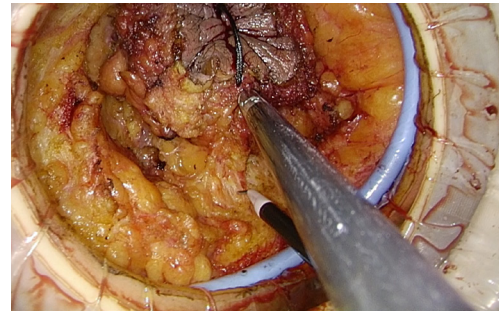


Figure 7 The vision of "down to up".

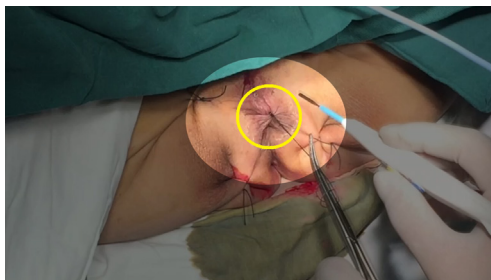


Figure 4 Incision line on the skin of patient undergoing abdominosacral amputation of the rectum.

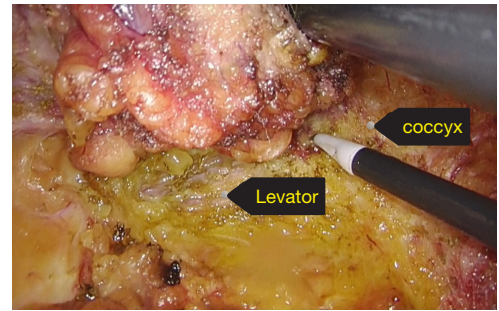


Figure 8 Dissection around the sphincter complex and followed the surface of the levators.



Figure 5 Wound protector open ischiorectal fat.

was defined laparoscopically by the neurovascular bundle laterally, the upper part of the vagina/seminal vesicles anteriorly and the coccyx posteriorly. The bowel was divided proximally, and a stoma was formed after closure of all trocar sites.

Trans-perineal approach

Perineal dissection consisted of dissection of the anus outside the external anal sphincter with preservation of the perianal skin and ischiorectal fat (Figures 4,5). Used a 3-port technique made by glove, the pelvic cavity was inflated with CO₂ to a pressure of 7–8 mmHg (Figure 6). Dissection continued around the sphincter complex and followed the inferior surface of the levators to a point laterally where they originate from the pelvic sidewall (Figures 7,8), connected each other on the left side to the level where the abdominal dissection was terminated (Figure 9). Then amputated the puborectalis and remove the specimen by the guide of abdominal team (Figure 10).

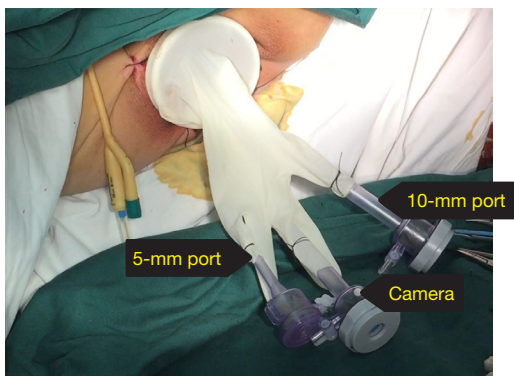


Figure 6 Use a 3-port technique made by glove.

An abdominal drain was sited in pelvic and directly closed the perineal wound in layers.

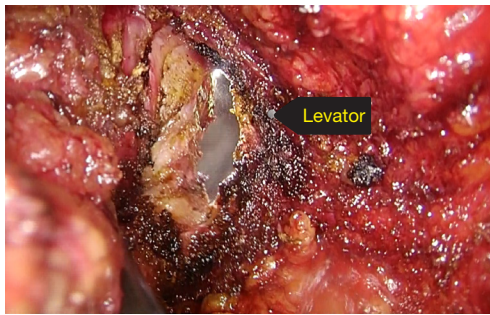


Figure 9 Connected each other on the left side where levators originate from the pelvic sidewall.

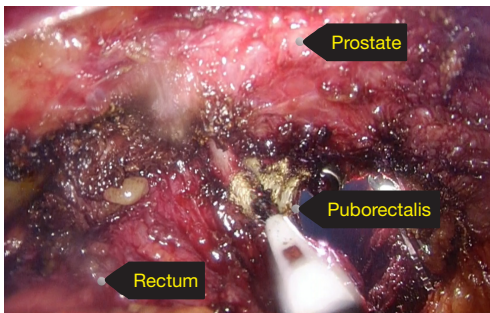


Figure 10 Amputate the puborectalis and remove the specimen by the guide of abdominal team.

Post-operative management

All patients had CRMs >1 mm; no IOP occurred. The median length of stay was 8 days. After surgery, the planned follow up for the patient was every 3 months for the first 2 years and then every 6 months for the following 3 years.

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Footnote

Conflicts of Interest: All authors have completed the ICMJE uniform disclosure form (available at <http://dx.doi.org/10.21037/ales.2016.11.10>).

The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. The study was conducted in accordance with the Declaration of Helsinki (as revised in 2013). The study is approved by the institutional ethical committee of China-Japan Union Hospital of Jilin University and obtained the informed consent from every patient.

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