

Transumbilical Totally Laparoscopic Single Port Sigmoidectomy for an Elderly Patient with Sigmoid Volvulus

Yaşlı Bir Sigmoid Volvulus Hastasına Transumbilikal Tam Laparoskopik Tek Port Sigmoidektomi

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ÖZET

Laparoskopik cerrahi sigmoid volvulus tanısı olan seçilmiş bir grup hastada faydalıdır. Ancak tek port laparoskopik cerrahinin geriyatrik hastalara uygulanması halen tartışmalıdır ve yeni çalışmalar ile kapsamlı olarak değerlendirilmelir. Bu olgu transumbilikal tam laparoskopik tek port sigmoidektominin yaşlı bir hastada güvenle uygulanabildiğini teknik detayları ile bildiren ilk çalışmadır. Ameliyat sırasında ve sonrasında komplikasyon gelişmedi. Ameliyat süresi 91 dakikaydı. Kesi büyüklüğü 2.5 cm idi. Hasta ameliyat sonrası dördüncü günde sorunsuz taburcu edildi.

Anahtar Kelimeler: Volvulus, Barsak, Yaşlı

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ABSTRACT

Laparoscopic surgery has beneficial effects in selected group of patients with sigmoid volvulus. However, application of single port laparoscopic surgery in geriatric patients is still questionable and certainly needs to be evaluated with further studies. This is the first report showing the feasibility and technical details of a transumbilical totally laparoscopic single port sigmoidectomy for sigmoid volvulus in an elderly patient. No intraoperative and no postoperative complications occurred. The operation time was 91 minutes. The wound size was 2,5 cm. The patient was discharged uneventfully on postoperative day four.

Key words: Volvulus, Intestine, Elderly

Introduction

Sigmoid volvulus (SV) is a cause of large bowel obstruction in geriatric patients. A sigmoidectomy with colorectal anastomosis is preferable treatment option for the treatment of SV. Benefits of laparoscopic surgery have already been shown in selected group of patients with SV.¹ Shorter hospital stay, better cosmesis, reduced wound size and less post-operative pain are the main advantages of laparoscopic surgery. Umbilicus is an access point for scarless surgery.² Many complex operations had been performed laparoscopically by using transumbilical single port technique previously.^{3,4} As an advanced minimally invasive intervention, transumbilical single port laparoscopy could be a transition period between conventional laparoscopy and natural orifice transluminal endoscopic surgery (NOTES). However, the current data about outcomes of single port laparoscopic surgery has been obtained from elective operations performed on selective patients. There is a dearth of information about the use of single port

laparoscopy for the surgical treatment of complex pathologies in geriatric patients. This is the first report showing the feasibility and technical details of a transumbilical totally laparoscopic single port sigmoidectomy for sigmoid volvulus in an octogenarian.

Case report

Preoperative preparation

A 80-year-old man was admitted to the emergency unit complaining with abdominal pain, abdominal distention, vomiting and unable to defecate. Sigmoid volvulus had been diagnosed with plain abdominal X-ray graphy and computed tomography. Endoscopic detorsion was failed and the symptoms did not resolve with the conservative management. From admission to the hospital till the surgery: the patient had received no oral regimen and was treated with nasogastric suction and parenteral fluid replacement. The patient received venous thrombosis prophylaxis 6 hours before the operation. Antibiotic

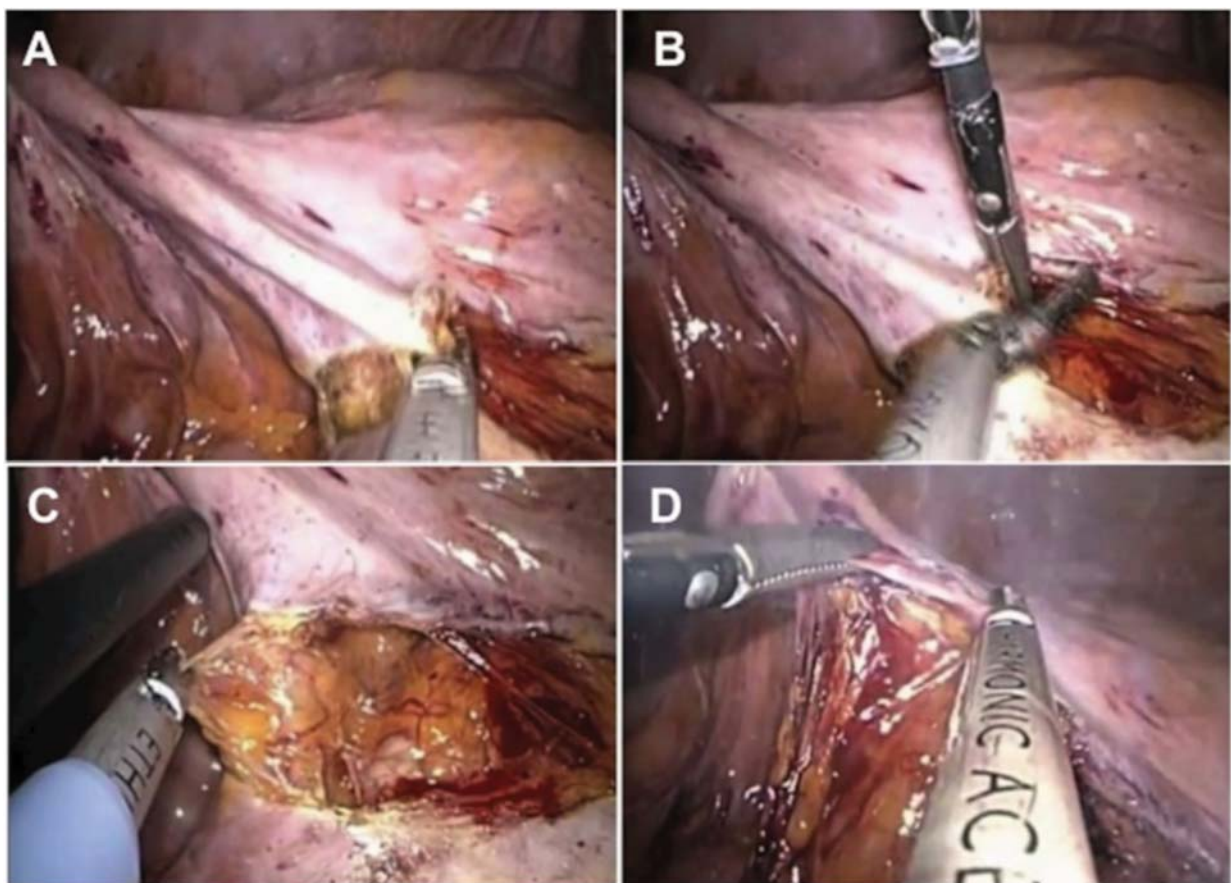


Figure 1. Steps of the medial dissection of the sigmoid colon.

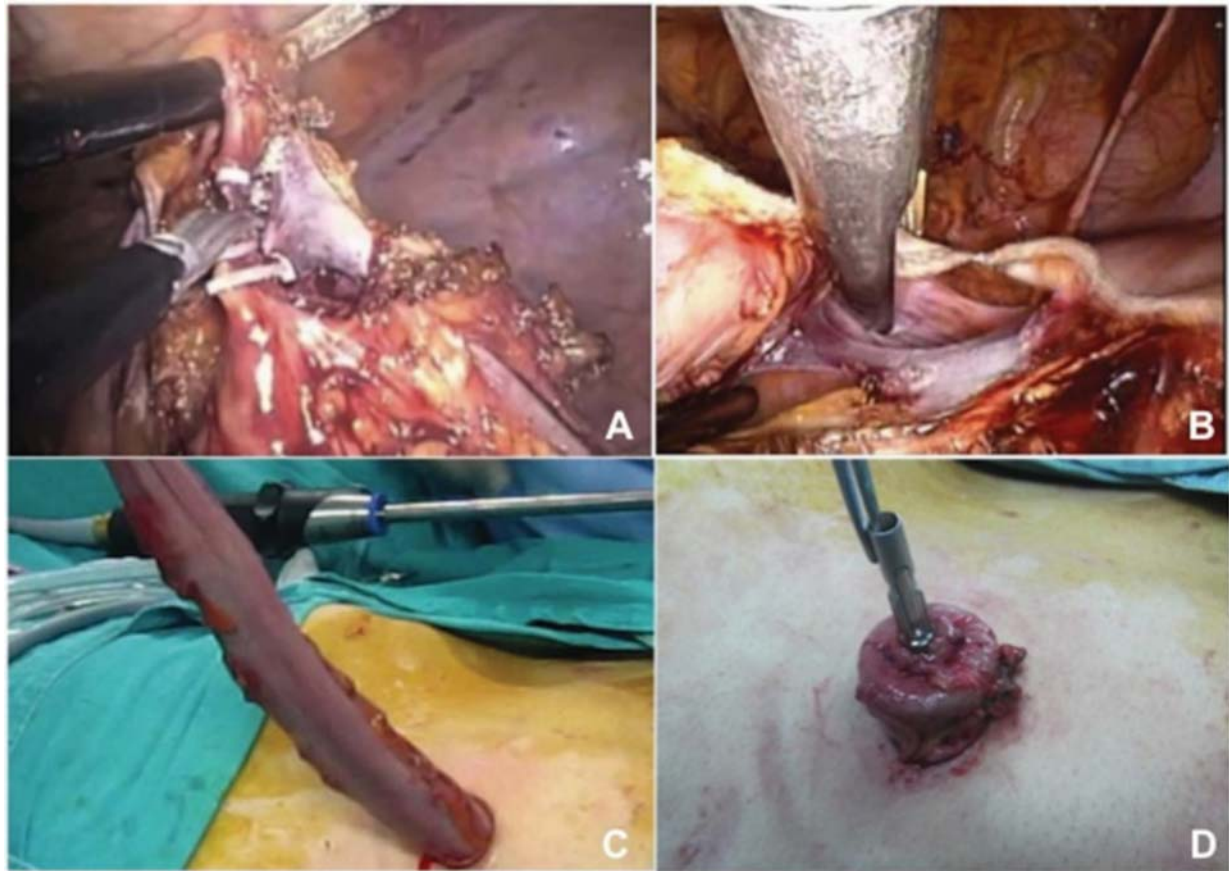


Figure 2. *A. Ligation and cut of the sigmoidal veins; B. Distal surgical margin was divided with using the endoscopic linear roticulating stapler; C. The proximal colon was retrieved to outside of the abdomen through the umbilical incision; D. The anvil of the circular stapler was placed in to the colon.*

prophylaxis was given at the same time with the induction of general anesthesia. The patient was fully consented for the operation entirely. The patient signed a detailed informed consent form before the operation.

Positioning of the patient and ports

The patient was placed in the lithotomic position. The surgeon and the first assistant stood on the patient's right side. A SILS™ Port (12 mm, Covidien AG, Norwalk, Connecticut, USA) and a Multiport Channel Single Port (Quad Port, Advanced Surgical Concepts, Dublin, Ireland) were used in the case. The Multiport Channel Single Port was used to insert additional 15 mm trocar beside the camera port for inserting the linear stapler. A 10-mm flexible laparoscope with a flexible 0 degree tip using HD-TV EXERA II System (EndoEYE, LTF-VH, Olympus KeyMed, Southend on Sea, UK) was used to allow two 5mm instruments to be worked synchronously.

Operative steps

The operation field was exposed with the help of 30 degrees Trendelenburg and 15 degrees right lateral tilt position after insertion of the SILS port. The omentum and the transverse colon were placed beneath the diaphragm and over the liver with using two articulating endograspers (Roticulator Endo Grasp™ with Spin Lock, Covidien AG, Norwalk, Connecticut, USA). Detortion of the sigmoid colon was performed with help of the roticulating endodissector (Roticulator™ Endo Dissect™ 5 mm, Covidien AG, Norwalk, Connecticut, USA) and the endograsper. The sigmoid colon was hanged up to the left lateral abdominal wall by an intracorporeal stitch passing through its thickened mesentery. The peritoneum was incised at the level of the promontorium above the iliac bifurcation with using the Ultracision® (Figure 1A, 1B, 1C, 1D) (Harmonic Ace, Ethicon Endosurgery, Cincinnati, OH). We protected the Toldt's fascia in order

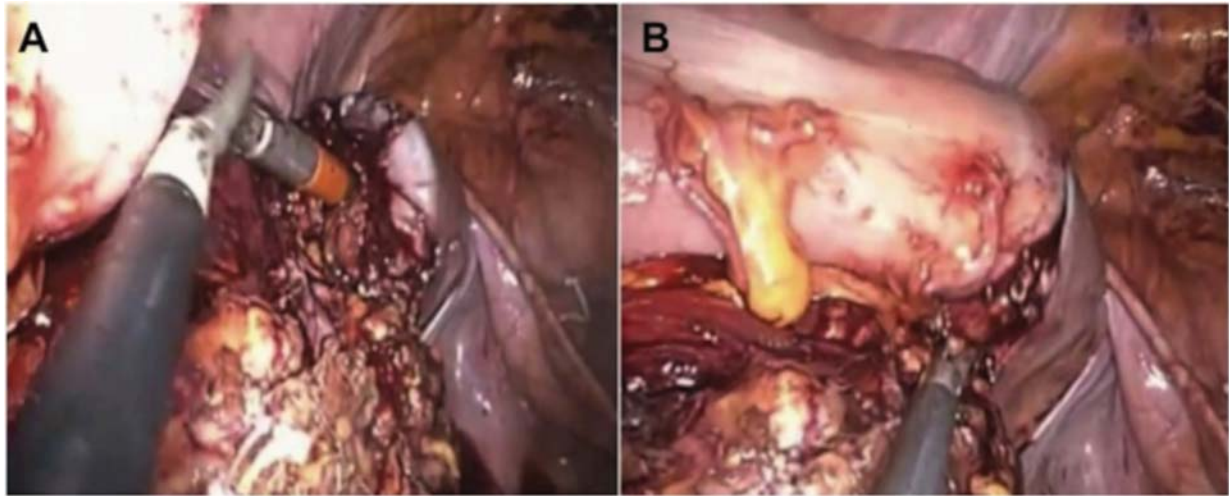


Figure 3. Anastomosis was created with the circular stapler.

to save the right ureter and the gonadal vessels. The dissection was continued by ligation of the sigmoid arteries and veins with using the 5 mm polymer endoclips (Hem-O-Lok®, Weck Closure Systems, North Carolina, USA) (Figure 2A). The sigmoid colon was retracted to the right side and the lateral attachments were separated with the Ultracision® unless to reach previously dissected medial area. After the sigmoid mesocolon was fully dissected from the Toldt's fascia, the sigmoid colon was prepared using the Ultracision® to be divided. Before using the endoscopic linear stapler, the left mesocolon was divided along inferior mesenteric pedicle with using Ultracision® and endoclips. Distal surgical margin was divided with using the endoscopic linear roticulating stapler (Echelon Flex TM, 45 mm Endocutters, with 45 mm gold reload, Ethicon Endo-surgery, Cincinnati, Ohio, USA) (Figure 2B). The proximal colon was found and retrieved to outside of the abdominal cavity through the umbilical incision (Figure 2C). Proximal edge of the sigmoid colon was divided with the linear stapler (PROXIMATE® 75mm, with 75 mm gold reload, Ethicon Endosurgery, Cincinnati, Ohio, USA). The anvil of the circular stapler was inserted in to the colon (Figure 2D) and the colon was placed in to the abdominal cavity. The circular stapler (CDH 29, Ethicon Endosurgery, Cincinnati, Ohio, USA) was inserted transanally and intracorporeal anastomosis was created (Figure 3A, 3B). The donuts were complete. The operation time was 91 minutes. The mean wound size was 2,5 cm.

Postoperative care

No intraoperative and no postoperative complications occurred. The patient was discharged uneventfully on postoperative day four. The patient is well a year after surgery.

Discussion

Single port laparoscopic surgery is an advanced and developing branch of minimally invasive surgery. However, benefits of single port laparoscopic surgery are questionable and there is few data about the application of single port laparoscopic surgery in geriatric patients. In previous reports, safety of carbon dioxide pneumoperitoneum in laparoscopic surgery has already been shown in elderly patients.⁵ If there were no contraindication to create a pneumoperitoneum in this patient group, why proper geriatric patients would not benefit from laparoscopic surgery with proper indications. Various surgical emergencies could be more life treating than younger adults when they happen to elder individual because of their fragile physique. Laparoscopic approach has also proven its safety and efficacy for treating emergent pathologies of geriatric population such as acute appendicitis.⁶ Laparoscopic colorectal surgery also reduces postoperative analgesic requirement and hospital stay in elderly patients with presenting no worse outcomes than open surgery.⁷ In elective SV cases, benefits of laparoscopic sigmoidectomy were also reported previously. Under these circumstances, we had

encouraged to apply a single port laparoscopic sigmoidectomy in an octogenarian for the treatment of SV. Postoperative period was uneventful and the patient was healthy after a year from the surgery.

In this report, we showed feasibility of totally laparoscopic transumbilical single port laparoscopic sigmoidectomy in an elder patient with no morbidity and mortality. Even conventional laparoscopy is rarely preferred for the treatment of sigmoid volvulus, the application of single port laparoscopic surgery is debatable at beginning phase. Our case is one of the initial procedures that present the

technique of single port laparoscopic sigmoidectomy for volvulus treatment. Reduction of the trocar number in single port surgery could improve the outcomes after surgery by reducing wound size and its related complications in geriatric patients. Further studies with high patient number will present exact place of single port laparoscopic treatment of SV in elderly patients.

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