

How I Do It

End Sigmoid Colostomy Reconstruction Using Purse-string Subcutaneous Suture via Extraperitoneal Route at the Site of a Previous Transperitoneal Loop Stoma

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Abstract

We previously experienced two cases of end sigmoid colostomy reconstruction via the extraperitoneal route at the same site as the transperitoneal loop stoma. For an anterior rectus fascia, the transperitoneal route used closed intraperitoneal interrupted sutures and continuous sutures with barbed sutures. A new extraperitoneal route was established through the sutured anterior rectus sheath. Before reconstructing the end stoma, a subcutaneous purse-string with monofilament absorbable sutures tied to create an approximately 2.5 cm diameter was used. There were no early complications associated with the stoma. One year after surgery, a parastomal hernia was not defined. Using the presented technique, two cases were successfully recreated extraperitoneally at the same site's end stoma.

Keywords

stoma recreation, extraperitoneal route, a purse-string suture

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Introduction

In patients with symptoms of rectum tumor, such as bowel obstruction and tumor bleeding, a loop sigmoid colostomy through the transperitoneal route is frequently created temporarily before neoadjuvant chemoradiotherapy (NACRT) for common rectal cancer. Following NACRT, radical resection is planned. In recent years, a sphincter preservation procedure of radical surgery for low rectal cancer has been widely performed using minimally invasive surgery with or without robotic assistance. When anal preservation cannot be guaranteed, it must be considered to create a permanent stoma. Furthermore, to avoid stoma complications such as parastomal hernia, the permanent stoma should be created through an extraperitoneal space[1-3]. It is difficult to choose a stoma creation site, because each stoma site should be created in a different region. If the existing

stoma site is the best position for the patient, a new stoma created at a different site would be inconvenient for stoma self-care. In such cases, a reconstructed end-colostomy from a loop colostomy should be considered at the same time. We present novel procedures for stoma recreation at the same site via a different route in this report.

Surgical Technique

Before neoadjuvant therapy for low rectal cancer, a sigmoid loop colostomy was performed at the site designed by the wound, ostomy, and continence (WOC) nurse. Following NACRT, the stoma opening was closed by suturing including the circumferential skin during abdominoperineal resection as radical surgery to minimize contamination (Figure 1 A). A 3 mm skin incision was made from the sutures (Figure 1B). The looped sigmoid colon was isolated from subcu-

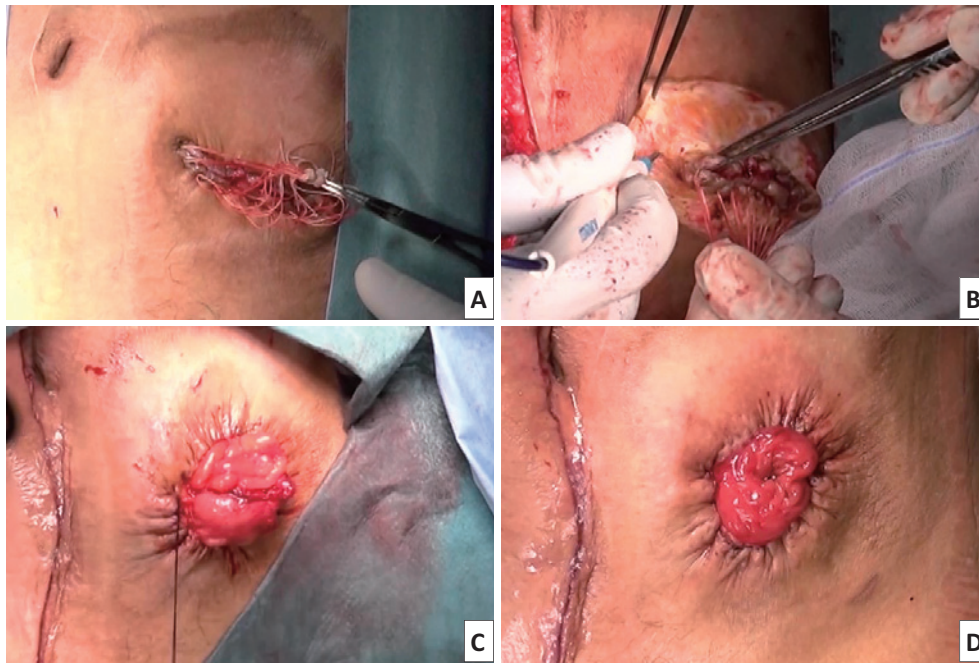


Figure 1. After closing the stoma opening (A), a 3 mm skin incision was made from the sutures (B). The subcutaneous purse-string suture was made to create a 2.5 cm diameter (C), and eight monofilament absorbable sutures were used to make the end stoma (D).

taneous tissue and the abdominal rectus muscle before being reintroduced into the abdomen. The sigmoid colon was cut proximally and sutured with linear staplers. Following radical resection via laparotomy, the peritoneum was closed with interrupted sutures using monofilament absorbable sutures 4-0 PDS II (Ethicon, Raritan, NJ, USA), and the anterior rectus fascia was sutured continuously with a barbed suture 0-Stratafix (Ethicon, Raritan, NJ, USA). 500 mL of saline was used to clean the skin defect. The slightly lateral side of sutured anterior rectus sheath was carefully cut, and the abdominal rectus muscle was divided. The extraperitoneal route was then developed. This route was used to remove a sigmoid colon stump for a neo stoma. As the space created by removing the stoma was larger than that created by the new skin region, a closed suction tube (19Fr BLAKE[®] Drain, Ethicon, Raritan, NJ, USA) was made at the subcutaneous defect, and the subcutaneous purse-string suture was made using monofilament absorbable suture 2-0 PDS II (Ethicon, Raritan, NJ, USA) to create an approximately 2.5-cm diameter (Figure 1C). Finally, eight sutures with monofilament absorbable suture 4-0 PDS II were used to approximate the end stoma (Figure 1D).

Results

We experienced two cases. There were no early complications associated with the stoma. One year after surgery, a parastomal hernia does not exist.

Discussion

Because the WOC nurse performed stoma site marking for a sigmoid loop colostomy through the transperitoneal route, the stoma was convenient for self-management, including pouch emptying and pouch change[4]. As a result, we must reconstruct an end stoma at the same site via an extraperitoneal route. A large skin defect appeared after removing the loop stoma. Purse-string suture was chosen as a permanent end stoma to adapt to the correct diameter. This technique was commonly used to close skin during stoma reversal. We had two cases where we performed presentative procedures, and there were no early stoma complications such as mucocutaneous separation or ischemia. Pouching issues were not occurred in either case. Due to the irregularities formed on the surface by purse-string suture used to heal the large skin defect, there was concern about complications due to pouching issues such as leakage of intestinal fluid, but the gaps between skin and pouch did not occur. In addition, because the skin incision for stoma was not created in the proper size, a purse-string suture was used to avoid complications. Nakayama reported that a similar subcutaneous suture was used to treat skin problems cause by parastomal hernia in the redo case, and the group did not observe any complications due to stoma problems[5]. After one year of observation, the concerning late complications resulting in an extraperitoneal route may prevent parastomal hernia in our cases.

Despite the fact that this report only includes two cases,

switching from a temporal loop sigmoid colostomy created via the transperitoneal to a permanent stoma at the same site accustomed to self-management may be a suitable procedure for such cases.

Conflicts of Interest

There are no conflicts of interest.

Author Contributions

All of the authors contributed significantly to our work. K.Y. developed the concept and methodology H.T. and I.Y. Writing-preparation of the first draft, K.Y.; Funding acquisition: not applicable. The published version of the manuscript has been read and approved by all authors.

Approval by Institutional Review Board (IRB)

Not applicable.

Informed Consent Statement

Informed consent was obtained from all treatments involved in this work.

Data Availability Statement

Not applicable.

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