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## Indications

- Low rectal adenocarcinoma; location precludes adequate distal margin for a sphincter preserving procedure.
- Melanoma of the anorectum involving the sphincters.

## Essential Steps

1. Combined lithotomy-supine position with both arms tucked.
2. Place four trocars: one supraumbilical 10-mm trocar, one left lower abdomen (at the site marked for the end colostomy) 5-mm trocar, one suprapubic 5-mm trocar, and one right lower abdomen 12-mm trocar.
3. Explore the abdomen for the evidence of metastatic disease (liver and peritoneum and ovaries in female).
4. Place the patient in steep Trendelenburg position.
5. Mobilize the left colon from medial to lateral, identifying and elevating the inferior

mesenteric artery (IMA) at the level of the sacral promontory so that the left ureter can be identified. Once the left ureter and the gonadal vessels are identified, sweep them back into the retroperitoneum.

6. Identify the superior rectal artery of the IMA and divide it. Alternatively, the IMA may be divided at its origin.
7. Mobilize the descending colon laterally along the white line of Toldt all the way to the splenic flexure. The degree of mobilization depends on the colon length required to create the end colostomy.
8. Lift the rectum and mesorectum anteriorly.
9. Identify the hypogastric nerves posteriorly and isolate them.
10. Start the dissection along the presacral fascia in the avascular plane and continue the dissection down to the levator muscles/pelvic floor posteriorly.
11. Proceed with the lateral dissection and take down the lateral stalks of the rectum while protecting the ureters.
12. In a female, elevate and retract the uterus with a stitch to the anterior abdominal wall if it obstructs the anterior plane of dissection.
13. Continue the anterior dissection to the levator ani muscles as the rectum is retracted posteriorly and the prostate/vagina is retracted anteriorly.
14. Divide the colon at the level of the sigmoid using the laparoscopic stapler. Exteriorize

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- the proximal end without tension or torsion through the left lower trocar.
15. Place pelvic drain.
  16. Proceed with the perineal portion of the resection. Working from below, incise the skin around the anus.
  17. Enter the peritoneal cavity in posterior midline; incise levators anteriorly.
  18. Pass the specimen through posteriorly.
  19. Complete anterior dissection.
  20. *If male: Avoid injury to the urethra.*
  21. *If female: May excise back wall of the vagina with the specimen.*
  22. Close the abdominal trocar sites and perineum.
  23. Mature the colostomy.

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### Note These Variations

- The abdomen may be entered using an open Hasson or other techniques.
- Note and document any metastatic disease.
- Level of division of vascular pedicle.

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### Complications

- Injury to ureters
- Injury to the urethra (male)
- Hemorrhage from the presacral venous plexus
- Non-healing perineal wound
- Sexual dysfunction

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### Template Operative Dictation

**Preoperative Diagnosis** Carcinoma of the anus/rectum

**Procedure** Laparoscopic abdominoperineal resection with end colostomy

**Postoperative Diagnosis** Same (*enumerate any metastatic disease found*)

**Indications** This \_\_\_\_-year-old *male/female* with *abdominal pain/bleeding/obstructive symp-*

*toms* was found to have carcinoma of the rectum located at \_\_\_\_ cm from the anal verge involving the sphincter complex. Workup with computed tomography scan of the abdomen and pelvis and CXR for evaluation of metastatic disease and MRI/endorectal ultrasound for the evaluation of locoregional spread revealed \_\_\_\_\_. Elective resection was indicated. Due to proximity to sphincter complex/concern for functional outcome with low anastomosis/other\_\_\_\_, abdominoperineal resection was chosen.

**Description of Procedure** The patient was placed in the supine position. Time-outs were performed using both preinduction and preincision safety checklists to verify correct patient, procedure, site, and additional critical information prior to beginning the procedure. General endotracheal anesthesia was induced. Preoperative antibiotics were given. A Foley catheter and orogastric tube were placed. The patient was then placed in lithotomy position using *Lloyd-Davies/other* stirrups with care taken to pad all pressure points. The abdomen and perineum were prepped and draped in the usual sterile fashion. *Procedure was begun with digital rectal exam and/or rigid sigmoidoscopy to confirm the level of the lesion.*

At the abdomen, a Veress needle/*open Hasson/Optiview trocar* was introduced into the abdominal cavity. Insufflation was initiated and pneumoperitoneum was established with appropriate pressures. A 10-mm supraumbilical incision was made and trocar was placed. Next, two 5-mm trocars were inserted in the suprapubic area in the midline and in the left lower quadrant under direct visualization. The abdomen was explored. The liver, omentum, peritoneum, *and ovaries (if present)* were inspected for the evidence of metastatic disease. *Metastatic disease was noted \_\_\_\_/no metastatic disease was noted.* A 12-mm trocar was inserted in the right lower quadrant.

The sigmoid colon was then retracted anteriorly and the vascular pedicle was identified. The peritoneum was incised and dissection was carried through the mesentery of the sigmoid. The

left ureter was identified and isolated. Dissection was carried laterally along the white line of Toldt to the splenic flexure, and the flexure was mobilized. *The sigmoidal branches and the superior rectal vessels of the IMA were then identified and divided with \_\_\_\_\_/the IMA was identified and divided at its origin with \_\_\_\_\_.* Posterior dissection of the rectum was performed in the presacral space using electrocautery to the level of the levator ani muscles. Next, lateral dissection was performed. Care was taken to avoid injury to the ureters and the iliac vessels as the lateral attachments were taken down using *electrocautery/\_\_\_\_\_.* Anteriorly the peritoneal reflection was opened up and the dissection was carried distally to the level of the levator ani muscles.

The sigmoid colon was then divided using the laparoscopic stapler after making certain that the proximal colon reached the abdominal wall stoma site freely. The completely dissected rectum was tucked into the pelvis to facilitate removal through the perineum. The proximal colon was exteriorized without tension or torsion through the left trocar site whose size was augmented to accommodate two fingers. A drain was placed into the pelvis through the right lower quadrant 12-mm trocar and exited through a lateral stab incision. All trocars were removed under vision and trocar sites were seen to be hemostatic. The fascial defect at the 12-mm trocar site was closed using \_\_\_ suture. The skin was closed using 4-0 monocryl subcuticular sutures. Dressings were applied.

Attention was then turned to the perineal portion of the procedure. The bony prominences of the ischial tuberosities were marked bilaterally, and the coccyx and the perineal body were marked. An elliptical incision was made connecting these points and encompassing the anus (*if female, optional*) and extending up to include a portion of the back wall of the vagina. Dissection

then progressed through subcutaneous tissues circumferentially. Hemostasis was achieved with electrocautery. *If male: The transversus perinei muscle was identified, and dissection was kept posterior to this anatomic landmark to avoid injury to the prostate and urethra.* The abdomen was entered posterior to the anus in the midline and anterior to the coccyx. The levators were then divided with electrocautery beginning posteriorly and progressing anteriorly. The specimen was delivered through this posterior incision into the perineal field. The remaining anterior attachments were then severed (*in the male, care was taken to palpate the Foley catheter and avoid injury to the urethra*) and the specimen removed. Hemostasis was achieved in the pelvis and perineal wound.

The perineal skin was closed with *skin staples/subcuticular sutures of \_\_\_\_\_/vertical mattress sutures of 3-0 Nylon/Vicryl.* *The back wall of the vagina was carefully re-approximated and closed with a subcuticular suture of running 4-0 Monocryl.*

The colostomy was then matured with multiple interrupted sutures of 3-0 Vicryl placed in such a way as to tack the full thickness of the edge of the colon to a subcuticular layer of the skin. An ostomy appliance was placed.

The patient was repositioned in the supine position, and a dressing of *Kerlix fluffs/ABD pads/mesh shorts* was applied to the perineal wound. A debriefing checklist was completed to share information critical to postoperative care of the patient. The patient was extubated in the operating room after tolerating the procedure well and was taken to the postanesthesia care unit in stable condition.

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