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Procedure Steps

1. Insert single-port device at the predetermined trephine stoma site.
2. Insufflation and laparoscopic assessment of the abdomen.
3. The small bowel and omentum are moved toward left upper quadrant (for an ileostomy) or right upper quadrant (for a colostomy).
4. Run the bowel proximally and distally for a suitable limb; ensure the ideal location and proper orientation.
5. Optional division of lateral attachments.
6. Assessment of reach of bowel (for tension-free stoma).
7. Deliver the bowel through the trephine and maturation of stoma.

Tips and Tricks

- Preoperative site marking by an enterostomal therapist helps assure the best functional location for the patient's stoma. If not available, mark the patient in a sitting position, assuring the mark is in the fat mound away from skin fold and where the patient preferably wears their waistband.
- Marking multiple quadrants is also helpful, as the patient's characteristics and intra-abdominal pathology may change your original surgical plan.
- For a loop ileostomy, it may advantageous to mark the proximal and distal position of the ileum with superficial sutures to assure proper orientation when delivered for

maturation. The author's preference is to use two different types of suture with the whole team aware of the pattern – “blue to the sky (PDS), brown to the ground (chromic).”

- Assessment of adequate reach is best done by almost completely desufflating the abdomen, so that a normal distance to the abdominal wall can be measured; however, when the abdomen is insufflated, if the bowel reaches the abdominal wall at the port site without tension, reach is likely adequate.
- For an ileostomy, pull a length of at least 5 cm out to facilitate Brooking the stoma.
- Prior to extraction, attention should be given that there is no twist of the bowel and that no small bowel lies laterally to the stoma.
- For a diverting colostomy, appropriate dissection and mobilization of the sigmoid colon and proximal transverse colon are needed, as the colon is not quite as mobile as the terminal ileum.
- A distal sigmoid colostomy is preferred over a proximal transverse colostomy due to its bulkiness, risk of prolapse, and difficulty managing the appliance; it is often ideal in the super morbidly obese patient, as its upper abdomen is often easier to bring the bowel through the abdominal wall.
- To avoid complication with the stoma, assure adequate mobilization to allow for a tension-free stoma, assure no undue twist of the bowel, and assure that, once the stoma is matured, there is no likelihood for volvulization around the stoma.

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Expanded Steps of the Operation

1. *Positioning and Insert port at predetermined trephine stoma site (supine position)*

The patient is supine with arms tucked. For stoma creation alone, the patient's legs do not need to be in lithotomy

position; if the stoma is placed for the protection of an anastomosis as part of another procedure and the patient is already in lithotomy, maintain the lithotomy position. For an ileostomy, the primary monitor is placed on the right side of the patient at the level of the hip. The operating nurses instrument table is placed between the patient's legs. There should be sufficient space to allow the operator to move from either side of the patient to between the patient's legs if necessary. For an ileostomy, the primary operating surgeon stands on the left side of the patient with the assistant standing on the patient's right, and moving to the left side, caudad to the surgeon once ports have been inserted. For a colostomy, the placement of the operator, assistant, and monitors are similar to an ileostomy, but reversed – of the primary monitor is on the left side of the patient at the level of the hip and the operator stands on the right side of the patient with the assistant standing on the patient's left, then moving to the right side, caudad to the surgeon once ports have been inserted.

A circular skin incision is made with a 15-blade scalpel or cut setting of the electrocautery at the site of the predetermined stoma. For an ileostomy, the skin disk should be approximately 2 cm or the size of a nickel. For a colostomy, the skin disk should be approximately the size of a quarter and permit 2 fingers into the peritoneal cavity. The skin disk is excised, leaving the subcutaneous fat in place. Insert Army-Navy or double-ended retractors to exposure as the incision is deepened. A longitudinal incision made in the anterior rectus sheath, exposing the rectus muscle. The rectus muscles are split and separated using a Kelly hemostat. The retractors are replaced deeper to aid exposure. The peritoneum is held with two hemostats and incised. Digital exam is performed to assure entry into the abdominal cavity. If using the Applied GelPOINT device, insert the ring and dial the ring down to fit against the abdominal wall. Insert a lap sponge into the abdomen and place the cap on the GelPOINT. If using the Medtronic SILS port, insert the lap sponge, then insert the port.

2. Insufflation and laparoscopic assessment of the abdomen

Insufflate the abdomen, insert the 30° laparoscopic camera or flexible tip camera, and survey the abdominal cavity. Be prepared to decide on the right type and location for diversion based on pathology seen during the assessment. For this reason, marking multiple sites for the possible stoma is useful.

3. *The small bowel and omentum are moved toward left upper quadrant (for an ileostomy) or right upper quadrant (for a colostomy) (Trendelenburg)*

The patient is rotated with the right side up and left side down (ileostomy) or left side up and right side down

(colostomy), with approximately 15–20° tilt to move the small bowel over to the contralateral side of the abdomen. The patient is then placed into the Trendelenburg position to allow gravitational migration of the small bowel away from the operative field. The greater omentum is reflected over the transverse colon so that it comes to lie on the stomach.

4. *Run the bowel proximally and distally for the ideal location and to assure proper orientation (Right side elevated (ileostomy), Trendelenburg)*

For an ileostomy, the small bowel is run proximally and distally, to confirm the cecum and colon proximally and to identify the ideal location for the stoma. If necessary, for a colostomy, a length of colon can be run to assure proper orientation. Two atraumatic graspers are held approximately 10 cm apart, and the bowel is elevated toward the abdominal wall, then run in a hand-over-hand approach and to assure proper orientation and location in relation to the pathology and ileocecal valve. Marking sutures can be placed laparoscopically to help maintain position.

5. *Run the bowel proximally and distally for a suitable limb; ensure the ideal location and proper orientation*

Using an atraumatic grasper, lift the proposed loop to the right (ileostomy) or left (colostomy) lower quadrant port site assuring no tension. Assessment of adequate reach is best done by almost completely desufflating the abdomen, so that a normal distance to the abdominal wall can be measured; however, when the abdomen is insufflated, if the bowel reaches the abdominal wall at the port site without tension, reach is likely adequate.

6. *Optional division of lateral attachments (Right side elevated [Ileostomy] or Left side elevated [Colostomy], Trendelenburg)*

The lateral attachments of the cecum and terminal ileum (for an ileostomy) or sigmoid and descending colon (colostomy) can be taken down for greater mobility. The terminal ileum or sigmoid, as appropriate, is grasped by the surgeon using atraumatic bowel graspers and freedom is checked toward the midline and up to the abdominal wall. The colon is grasped and retracted medially, and the lateral attachments along the white line of Toldt are divided with an energy source.

7. *Assessment of reach of bowel (for tension-free stoma)*

Recheck mobility, by assuring the terminal ileum (ileostomy) or sigmoid (colostomy) can reach the anterior abdominal

wall. The proposed stoma site is grasped by an atraumatic bowel grasper and brought up to the abdominal wall.

8. *Deliver the bowel through trephine and maturation of the stoma (supine)*

The cap of the single-port device is removed and the terminal ileum is delivered using the internal grasper and a Babcock externally to assist. Care is taken not to twist or change the orientation of the terminal ileum or colon as it is extracted; marking suture aid in confirming the proximal and distal sites. For an ileostomy, a length of at least 5 cm is externalized to facilitate Brooking the stoma. For a colos-

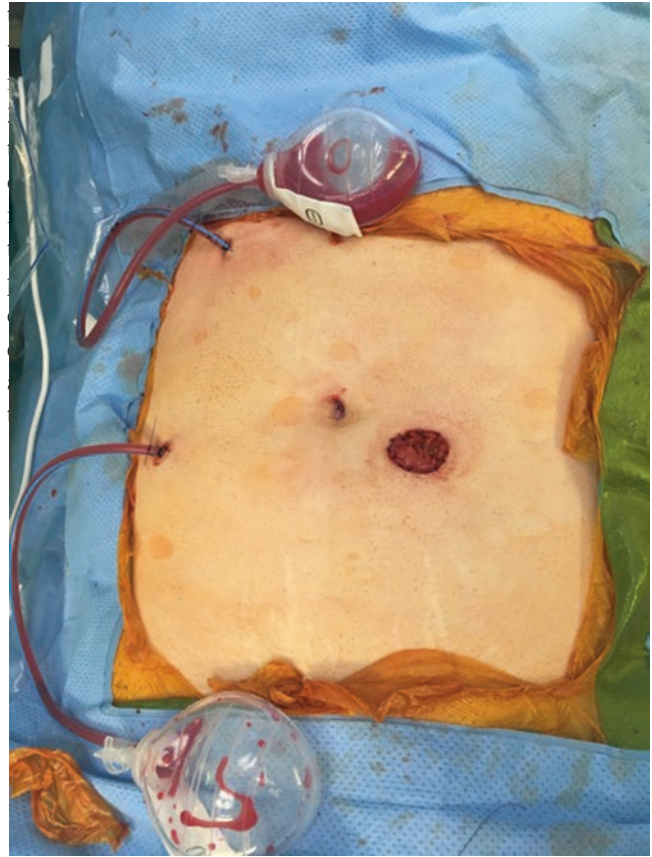


Fig. 18.1 Completed SILS Colostomy