Loop Ileostomy Creation and Closure

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Creation

Preference Card

- Number 15 blade scalpel with handle
- Toothed and non-toothed forceps (Adson-Brown, DeBakey, rat tooth, Bonney)
- Electrocautery
- Kocher, Allis, and Babcock clamps
- Kelly, mosquito hemostats
- Needle holders
- Curved Metzenbaum and Mayo scissors
- Retractors (*small* Richardson, Deaver, Army Navy)
- Ileostomy rod – for loop ileostomy creation
- Suction
- Sutures
  - 3.0 polyglactin or catgut
  - 0 silk sutures (to secure stoma rod if needed)

Patient Positioning/Operating Room Setup

- This procedure is usually performed at the conclusion of various other intestinal procedures; patient positioning will vary.

Nodal Points

Procedure Steps

- Identify the loop of ileum that reaches without any tension to the anterior abdominal wall, at the preoperatively marked stoma site.
- Excise a skin disk.
- Dissect down to the anterior rectus fascia.
- Make a vertical or cruciate incision in the fascia overlying the rectus muscle.
- Split the rectus fibers bluntly until the posterior rectus sheath and peritoneum are identified. The bowel needs to be protected with a dry lap on assistant's left hand underneath the stoma site while creating the opening.
- Incise the fascia and peritoneum to create an opening that can accommodate two fingers.
- Check for hemostasis of the muscle.
- Carefully bring the chosen ileostomy loop (or end) through the opening ensuring proper proximal and distal orientation.

For a *loop ileostomy* (Fig. 21.1)

- Create a mesenteric window abutting the ileal wall and insert a stoma rod for support.
- Secure the stoma rod in place with 0 silk sutures.
- Make a curvilinear incision over the efferent limb of the stoma.
- Mature the afferent limb in a Brooke fashion using 3-0 catgut or polyglactin sutures.

Brooking the ileostomy is done in three steps: (1) a full-thickness bite of the edge of the ileum; (2) a seromuscular bite of the ileum at the level of the skin; and (3) a dermal bite to secure the stoma to the skin.

The edges of the ileum are then everted and the sutures are tied down.

- The efferent limb is secured to the dermis

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R. J. Rosenthal et al. (eds.), *Mental Conditioning to Perform Common Operations in General Surgery Training*,
https://doi.org/10.1007/978-3-319-91164-9_21

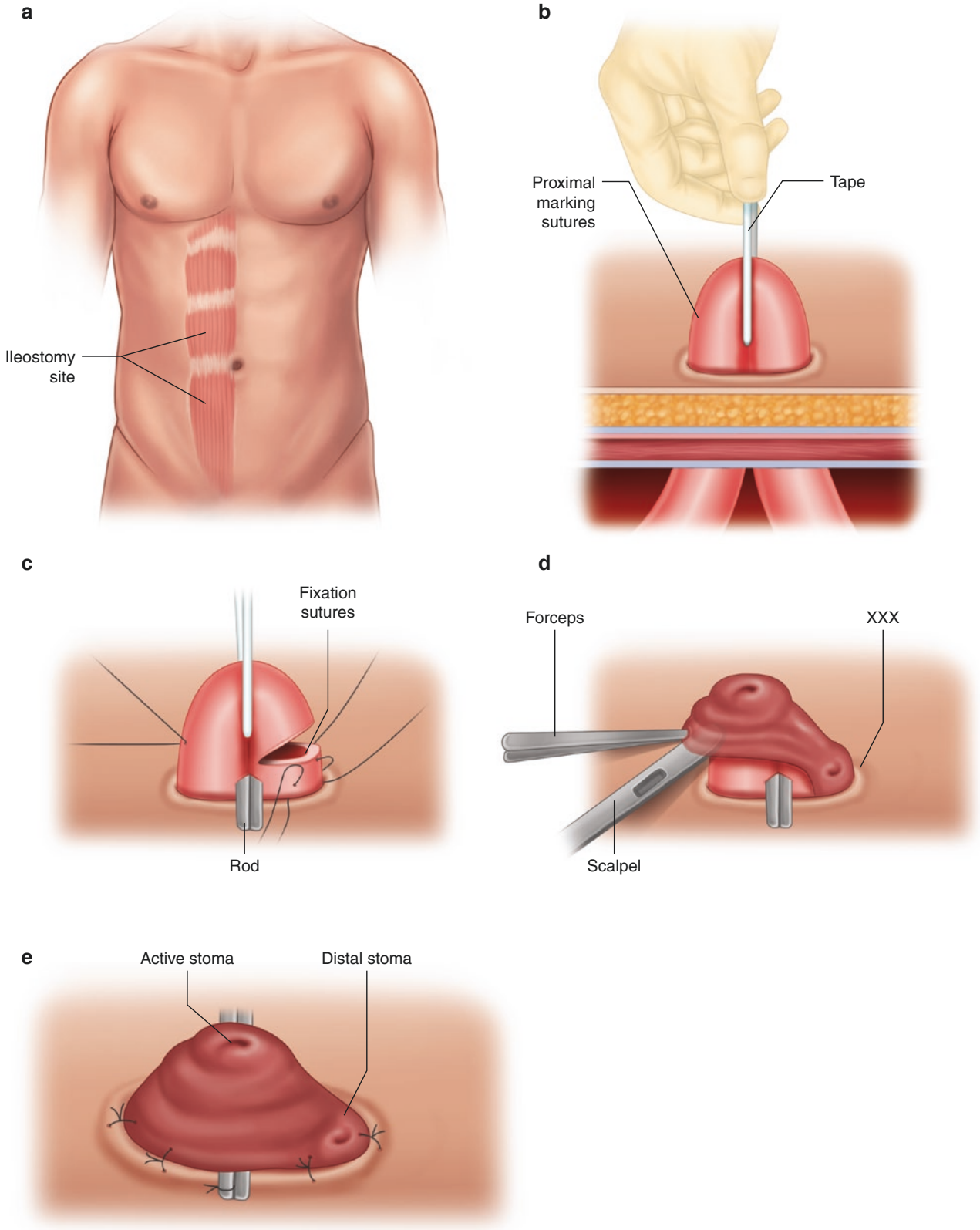

Fig. 21.1 (**a**–**e**) Loop ileostomy creation steps

For an *end ileostomy*, the ileum is matured in a Brooke fashion circumferentially, as described above.

Pearls and Pitfalls

- Ileostomy site should be marked bilaterally, prior to surgery, with the patient awake in the sitting and supine position.

Closure

Preference Card

- Number 15 blade scalpel with handle
- Toothed and non-toothed forceps (Adson-Brown, DeBakey, rat tooth, Bonney)
- Electrocautery
- Kocher, Allis, and Babcock clamps
- Kelly, mosquito hemostats
- Needle holders
- Curved Metzenbaum and Mayo scissors
- Retractors (*small* Richardson, Deaver, Army Navy)
- Mechanical linear cutting stapler (60–100 mm)
- Suction
- Sutures
  - 2.0/3.0 polyglactin
  - 0 polyglactin ties
  - 0 polypropylene
  - Skin stapler or 2.0 absorbable sutures for skin

Patient Positioning/Operating Room Setup

- Supine position, no bean bag needed.
- Left arm abducted on arm board to provide intravenous access.
- Prep and drape the abdomen.
- Surgeon is to the patient's right.
- Assistant is to patient's left.
- Scrub nurse to surgeon's right.

Nodal Points

Type of Incision

- Circular- or diamond-shaped incision along the mucocutaneous junction of the ileostomy (Fig. 21.2)

Dissection Step

- Dissect through the subcutaneous tissue and fascia with a sharp technique (Metzenbaum).

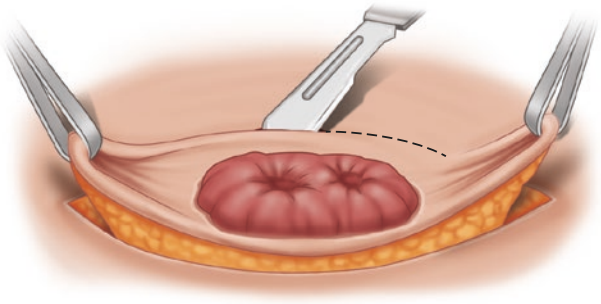

Fig. 21.2 Incision around the ileostomy

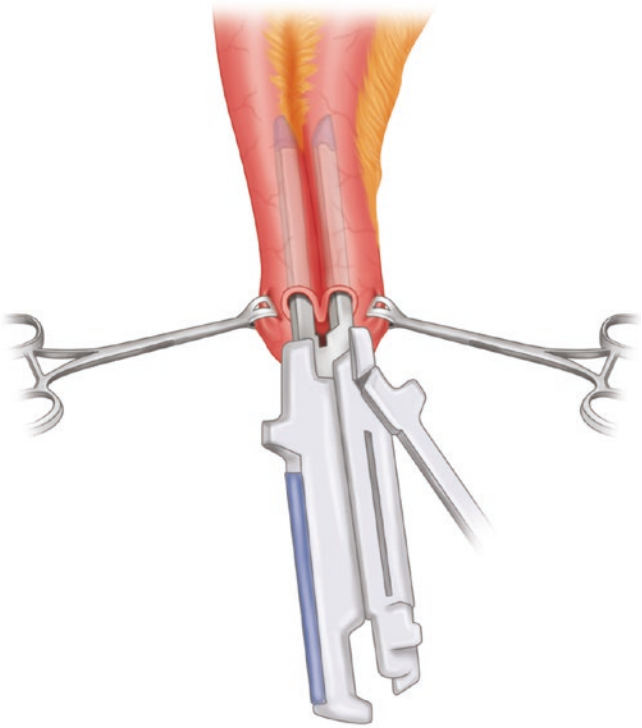

Fig. 21.3 Antiperistaltic anastomosis creation

- Take down the adhesions from the emerging bowel and surrounding tissues circumferentially, avoiding serosal tears.
- Enter the peritoneal cavity; extract the ileum loops gently.

Resection Step

- Excise the mucocutaneous junction and fibrotic/nonviable tissue.

Reconstruction Stage

- Create an antiperistaltic ileo-ileal side-to-side anastomosis stapling the antimesenteric sides of the ileum with a linear stapler, carefully inserted through the already existing enterotomies (Fig. 21.3).

- Transect the service enterotomies using a linear stapler.
- Return the bowel to the peritoneal cavity.
- Close the fascia defect with long lasting absorbable sutures.
- Skin is closed with a pursestring suture or completely after a subcutaneous drain is left in place.

Pearls and Pitfalls

- If the stoma is viable and not fibrotic, an end-to-end anastomosis without transecting might be performed.
- Extra care should be taken to avoid mesenteric stretching and/or twisting during the procedure.

Access Reader Checklist Appendix

☑ READER CHECKLIST
Loop Ileostomy Creation and Closure

LOOP ILEOSTOMY CREATION

✓ PREFERENCE CARD

►**Instruments**
__#15 blade scalpel with handle
__Toothed and non-toothed forceps (Adson Brown, Debakey, Rat tooth, Bonney)
__Electrocautery
__Kocher, Allis and Babcock clamps
__Kelly, Mosquito hemostats
__Needle holders
__Curved Metzembaum and Mayo scissors
__Retractors (small Richardson, Deaver, Army Navy)
__Ileostomy rod- for loop ileostomy creation
__Suction

►Sutures
__3.0 polyglactin or catgut
__0-silk sutures (to secure stoma rod if needed)

✓ PATIENT POSITIONING/ OPERATING ROOM SETUP

►**Patient Positioning**
__This procedure usually performed at conclusion of various other intestinal procedures - patient positioning will vary

✓ NODAL POINTS

►**Procedure Steps**
__Identify loop of ileum that reaches without any tension to anterior abdominal wall, at preoperatively marked stoma site
__Excise skin disk
__Dissect down to anterior rectus fascia
__Make vertical or cruciate incision in fascia overlying rectus muscle
__Split rectus fibers bluntly until posterior rectus sheath and peritoneum identified.
__Bowel needs to be protected with dry lap on assistant's left hand underneath stoma site while creating opening
__Incise fascia and peritoneum to create opening that can accommodate two fingers
__Check for hemostasis of muscle
__Carefully bring chosen ileostomy loop (or end) through opening ensuring proper proximal and distal orientation

Loop ileostomy
__Create mesenteric window abutting ileal wall and insert stoma rod for support
__Secure stoma rod in place with 0-silk sutures
__Make curvilinear incision over efferent limb of stoma
__Mature afferent limb in Brooke fashion using 3-0 catgut or polyglactin sutures
__Brooking ileostomy is done in 3 steps: 1) a full thickness bite of edge of ileum; 2) seromuscular bite of ileum at level of skin; 3) dermal bite to secure stoma to skin edges of ileum are then everted and sutures tied down
__Efferent limb secured to dermis

End ileostomy
__Ileum matured in Brooke fashion circumferentially, as described above.

LOOP ILEOSTOMY CLOSURE

✓ PREFERENCE CARD

►**Instruments**
__#15 blade scalpel with handle
__Toothed and non-toothed forceps (Adson Brown, Debakey, Rat tooth, Bonney)
__Electrocautery
__Kocher, Allis and Babcock clamps
__Kelly, Mosquito hemostats
__Needle holders
__Curved Metzembaum and Mayo scissors
__Retractors (small Richardson, Deaver, Army Navy)
__Mechanical linear cutting stapler (60-100mm)
__Suction

►Sutures
__2.0/3.0 polyglactin
__0 polyglactin ties
__0 polypropylene
__Skin stapler or 2.0 non-absorbable sutures for skin

✓ PATIENT POSITIONING/ OPERATING ROOM SETUP

►**Patient Positioning**
__Supine position, no beanbag needed
__Left arm abducted on armboard to provide intra-venous access
__Prep and drape the abdomen

►**Operating Room Setup**
__Surgeon is to patient's right
__Assistant is to patient's left
__Scrub nurse to surgeon's right

✓ NODAL POINTS

►**Type of Incision**
__Circular or diamond-shaped incision along the mucocutaneous junction of the ileostomy

►**Dissection, Resection, Reconstruction**
Dissection
__Dissect through subcutaneous tissue and fascia with sharp technique (Metzenbaum)
__Take down adhesions from emerging bowel and surrounding tissues circumferentially, avoiding serosal tears
__Enter peritoneal cavity, extract ileum loops gently

Resection
__Excise mucocutaneous junction and fibrotic/non-viable tissue

Reconstruction
__Create antiperistaltic ileo-ileal side-to-side anastomosis stapling antimesenteric sides of ileum with linear stapler, carefully inserted through already existing enterotomies
__Transect service enterotomies using linear stapler
__Return bowel to peritoneal cavity
__Close fascia defect with non-absorbable sutures
__Skin left open to heal in secondary intention, or closed after subcutaneous drain left in place