

Describe an operation – Hartmann's procedure



LIVERPOOL HOSPITAL SURGICAL TEACHING
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What and who ?



- Resection of rectosigmoid and formation of colostomy, closure of rectal stump
- In response to high mortality of abdominoperineal resection described in 1908 by Miles
 - Operative mortality 38% APR compared to 8.8% HP
- First described by French surgeon Henri Albert Hartmann at the 30th congress of the French surgical association in 1921

Indications for a Hartmann's procedure



- Initially developed for treatment of distal colonic adenocarcinoma
- Currently, for complicated perforated diverticulitis

Hinchey's classification of complicated diverticulitis

- Stage I - Diverticulitis with a paracolic abscess
- Stage II - Diverticulitis with a more distant abscess (pelvic or retroperitoneal)
- Stage III - Diverticulitis with purulent peritonitis
- Stage IV - Diverticulitis with fecal peritonitis





Indications for Hartmann's procedure



- **Recurrent diverticulitis**
 - Resection with anastomosis is recommended for Hinchey's I and II
 - Sometimes done after percutaneous drainage of paracolic or pelvic abscess, after possibly a 6 week interval
 - Hartmann's resection for Hinchey's III and IV

Other indications



- Emergency - Management of obstruction or perforation
- Elective - Cure, palliation or in response to an impending obstruction



- Less commonly; for ischemia, volvulus, iatrogenic perforation of the colon during colonoscopy or by a foreign body, metastatic cancer to the pelvis, trauma, anastomotic dehiscence, ulcerative colitis, radiation injury

Preop stomal therapy r/v



- Appropriate marking of site can reduce postoperative problems such as leakage, fitting challenges, need for expensive custom pouches, skin irritation and clothing concerns.
- Poor placement can impact emotional well being.
- Good placement enhances the likelihood of patient independence in stoma care with early resumption of normal activities.

marking



- Preferably within rectus muscle approx 2 inches from incision
- Below belt if possible for concealment
- If large pendulous abdomen, mark high where change will be possible
- Avoid scars, bony areas and creases
- Within triangle formed by ASIS, umbilicus and pubic symphysis

procedure



- GA
- Position – supine or lithotomy
- IDC, TEDS/SCD's, IV antibiotics, prep and drape
- Consider cystoscopy and insertion of ureteric catheters if redo surgery, inflammation ++, hx of radiation tx
- Lower midline Laparotomy to linea alba and entry into peritoneal cavity
- Examine cavity, confirm diagnosis
- Thorough exploration of contents

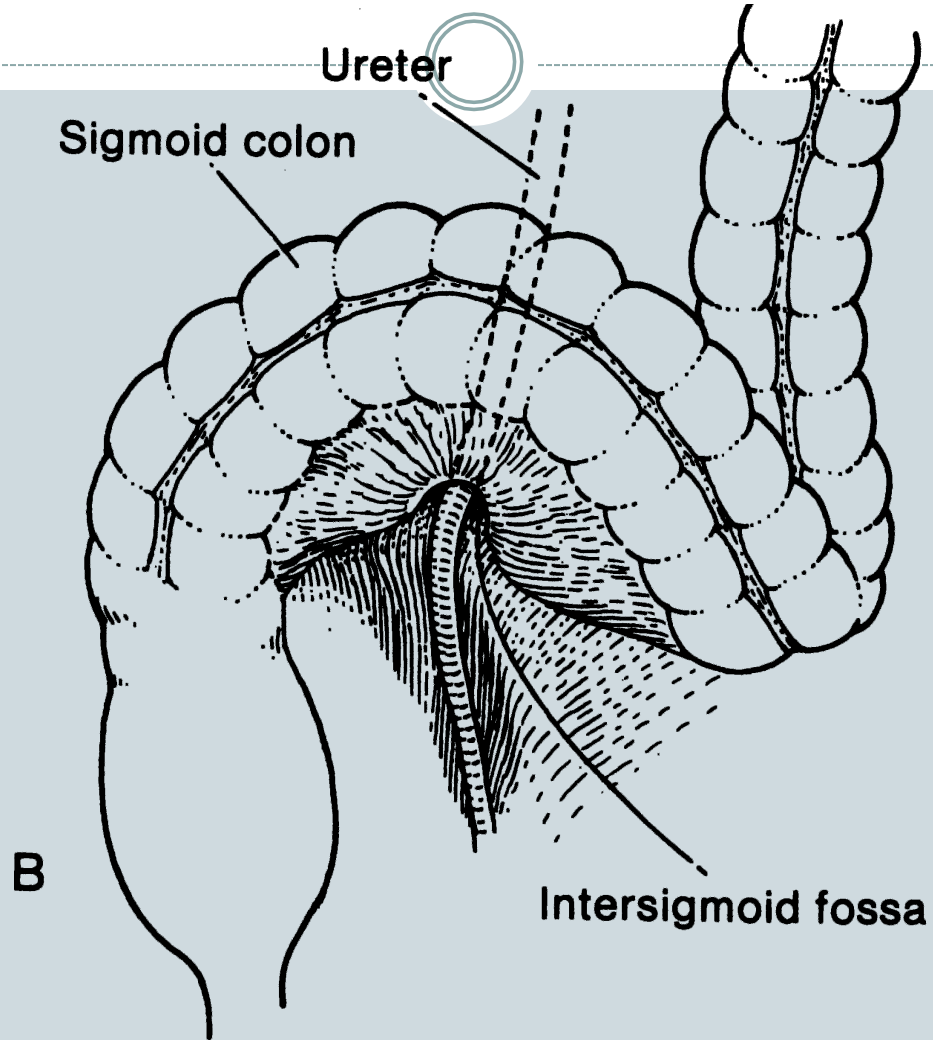


- Site of contamination should be controlled with purse string or direct closure if possible
- Self retaining retractors ie bookwalter
- Pack small bowel in right upper quadrant in warm, moist sponge
- Mobilize left colon, place moist sponge over left colon – begin by dividing congenital sigmoid adhesions. Avoid traction on Spleen.
- Left colon is retracted anteromedially out of the wound to expose lateral peritoneal attachments
- Full thickness of the peritoneum is incised from sigmoid colon in a cephalad direction

Procedure - continued

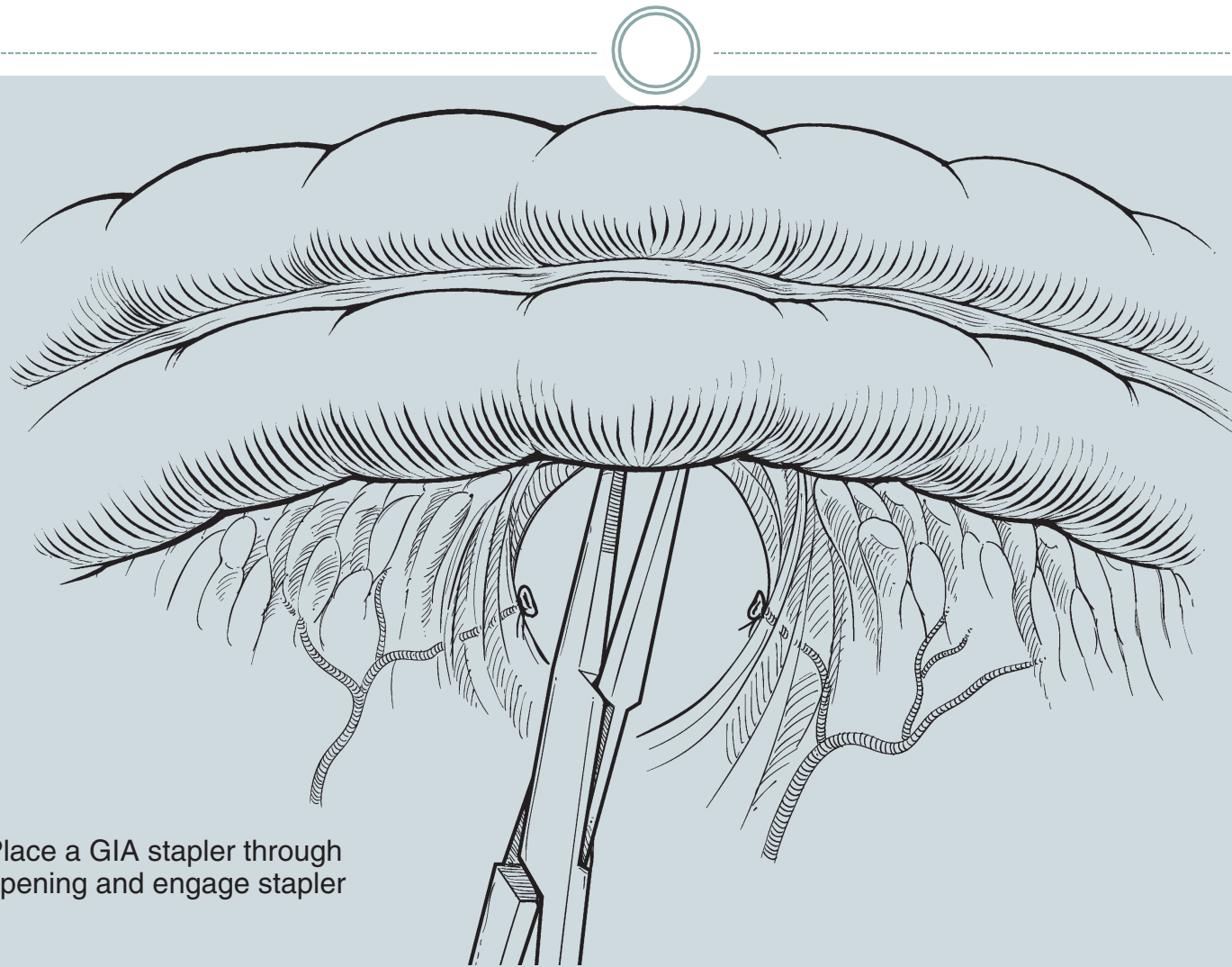


- Sigmoid colon retracted medially to place V shaped mesocolon on a stretch
- Peritoneum at the apex is entered and the extrafascial plane between left mesocolon and Gerota's fascia is developed
- Identify gonadal vessels and left ureter
- Ureter seen as it crosses over the common iliac vessels – confirm by demonstrating vermiculation with DeBakey forceps, non pulsatile
 - Passes on the psoas major in the retroperitoneum





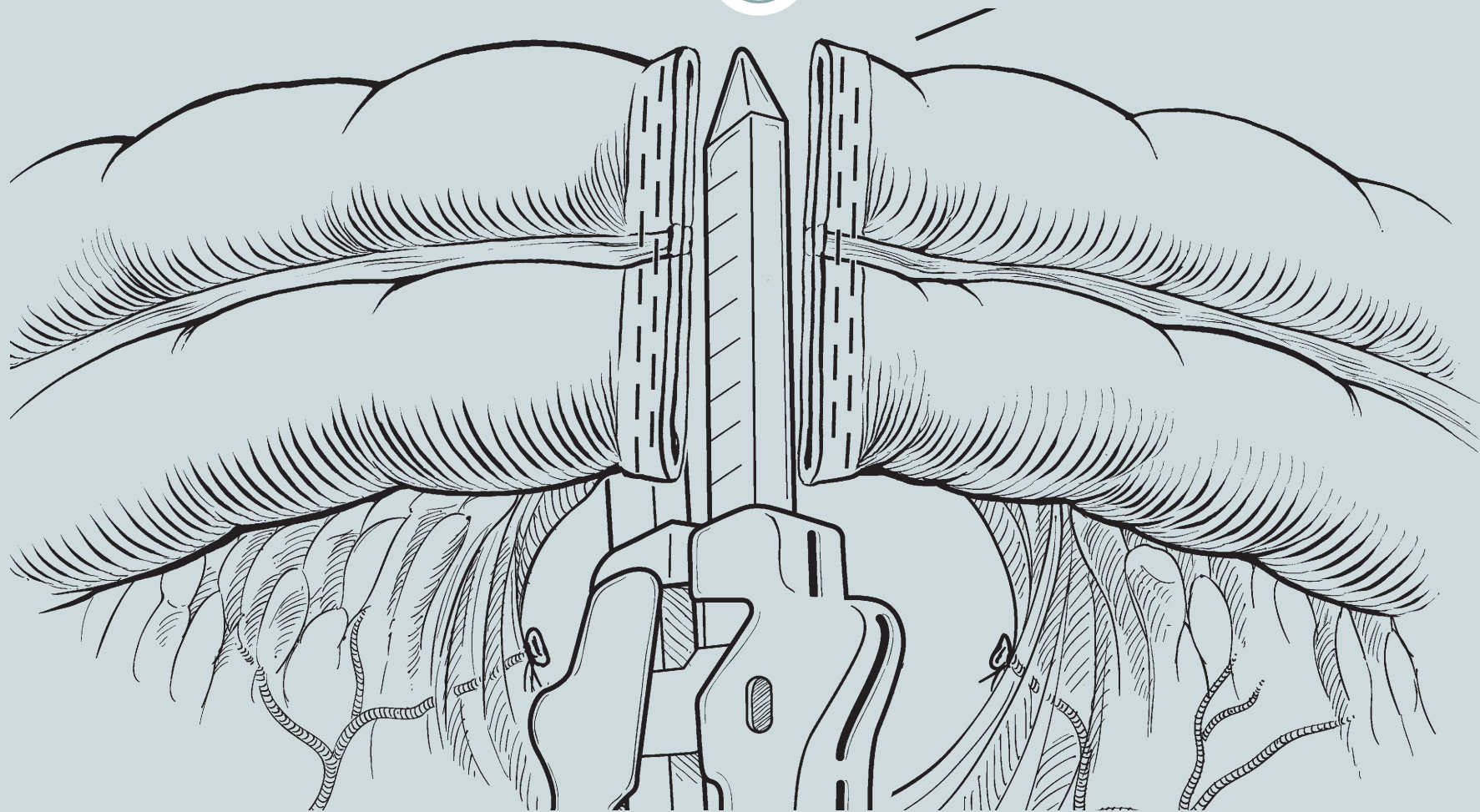
- displace left ureter and gonadal vessels posteriorly
- continue mobilisation under the left colon mesentery towards the midline
- Mobilise until length adequate for tension free colostomy
- Mark limits of resection at the mesenteric border of the sigmoid colon
- peritoneum scored between the two sites
- Vessels transilluminated and ligated with 2/0 vicryl

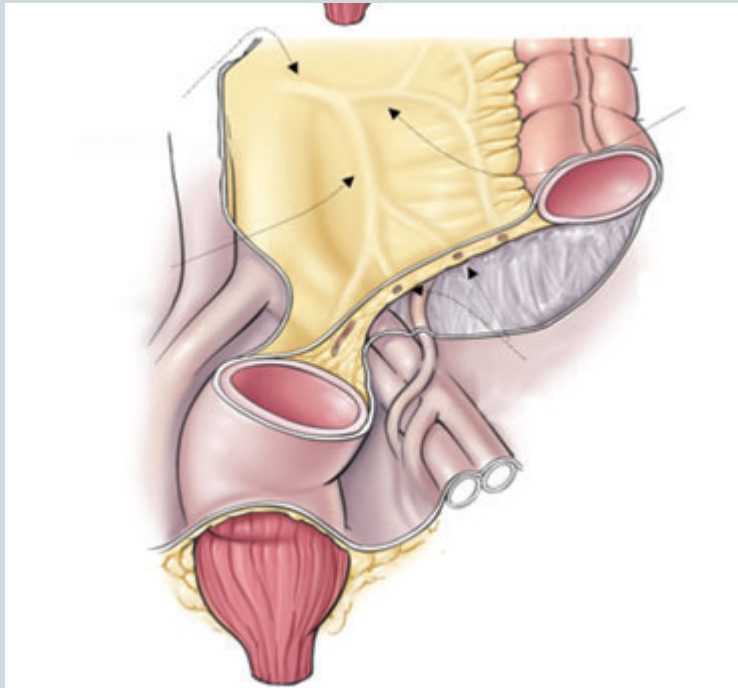


Place a GIA stapler through opening and engage stapler



- Place a 75mm gastrointestinal anastomosis (GIA) stapler through this aperture and engage the stapler
- Distal margin of resection usually at rectosigmoid junction
- In some instances prox. rectal mobilization may be required for distal transection

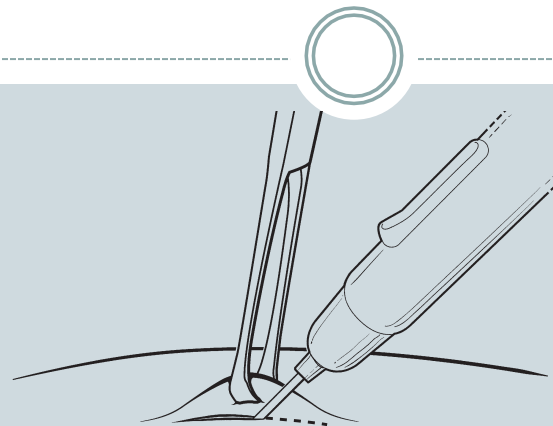




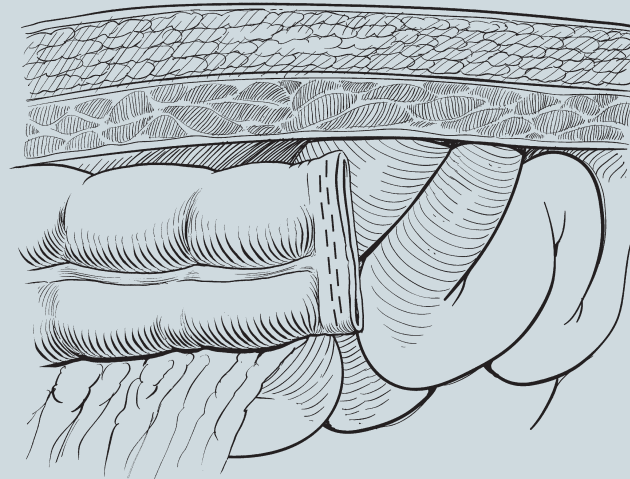
Procedure - continued



- Distally, a linear stapler or curved contour stapler can be used for the rectum
- Identify site of trephine and hold skin up with allis forceps or moynihan forceps
- Create a circular/disc skin defect – 3cm in diameter
- Dissect thru subcutaneous tissues using czerny retractors until fascia is reached, amputate fat above this



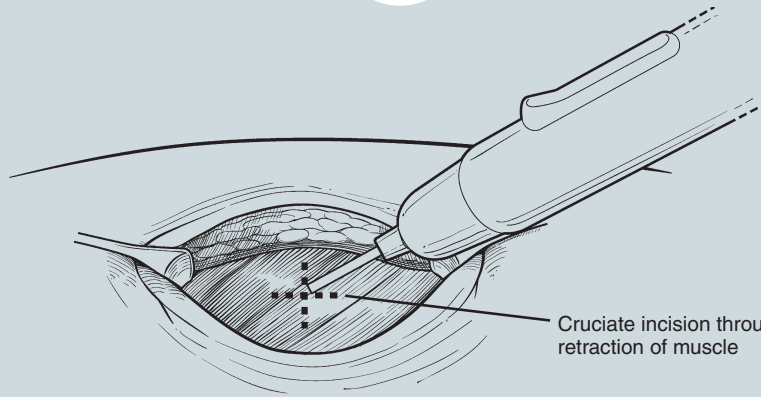
Incise skin with
electrocautery or scalpel



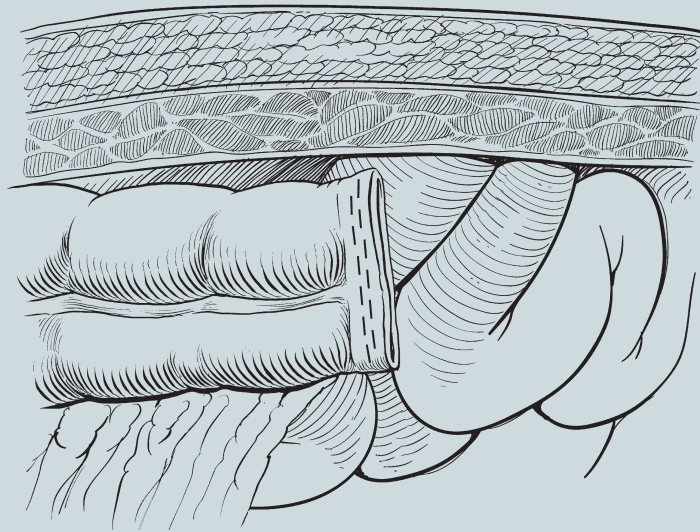
Procedure - continued



- With cutting diathermy or scalpel, make cruciate incision through fascia without cutting through muscle
- Using straight Mayo scissors, separate muscle fibres by spreading blades
- Use retractor to keep the fibers separated and make cruciate incision in posterior sheath with cutting diathermy
- Preserve inferior epigastric vessels
- Defect should allow two fingers to go through
- Babcock on stapled edge, pull colon through (check orientation, ensure no twists) 3cm above skin



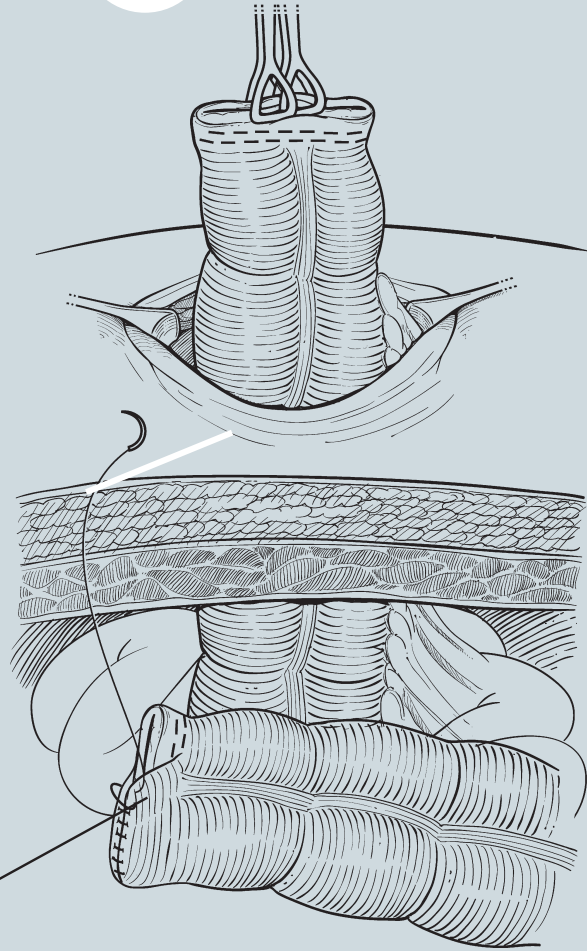
Cruciate incision through fascia,
retraction of muscle



Procedure - continued



- Oversee stapled distal end with non absorbable 2/0 prolene
- Irrigation until clear returns if extensive contamination
- Release small bowel from sponge
- Drains if contamination ++
- Confirm position of NGT
- Closure of abdominal wall with o loop PDS
- Skin – clips or interrupted sutures if contaminated case
- Wound dressing



Use Lembert sutures to buttress the staple line of the distal colon, thereby creating Hartmann's pouch

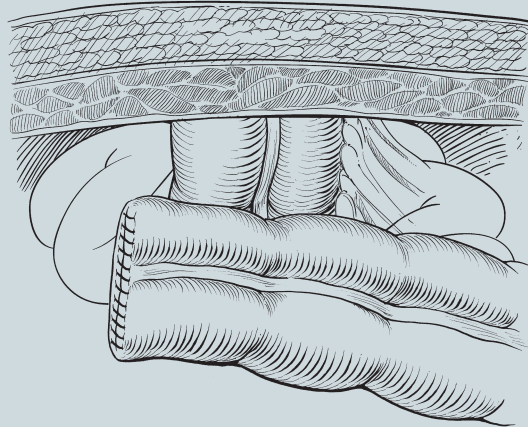
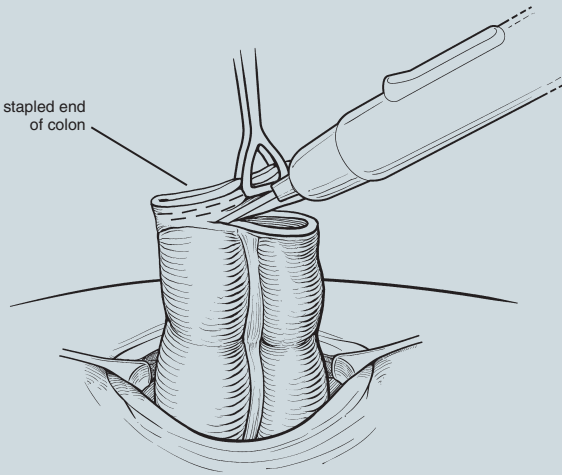
Procedure - continued

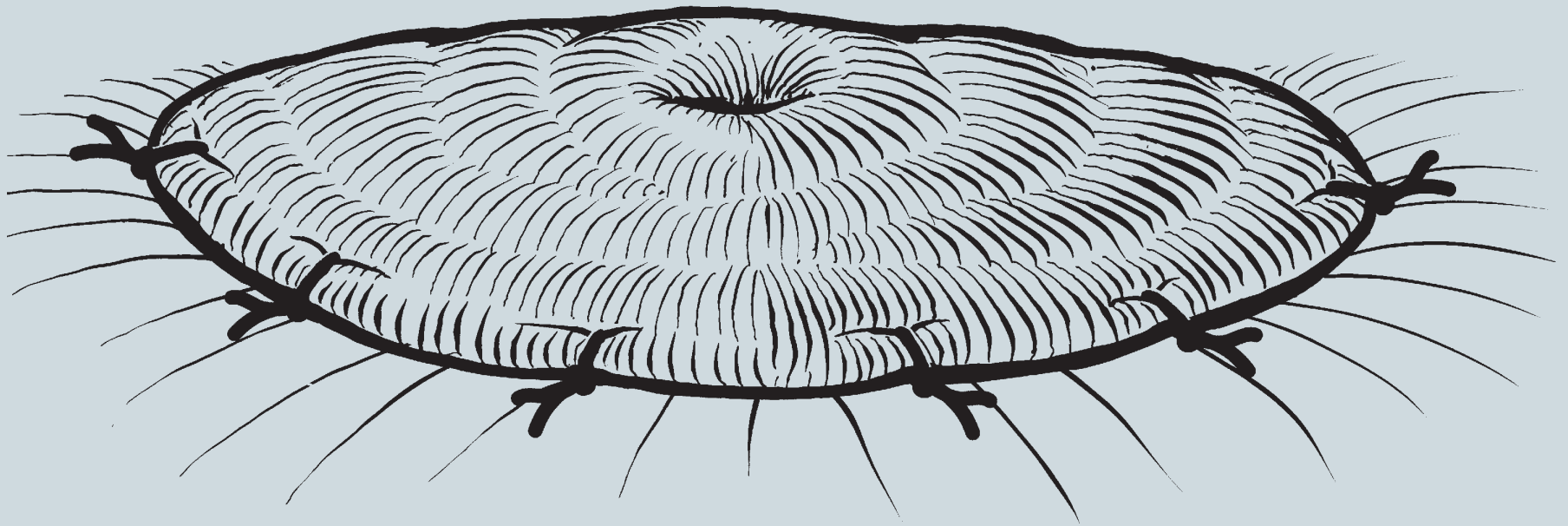


- Cut stapled end of stoma
- Interrupted dermis-seromuscular sutures with undyed taper cut 2/0 PDS
- Appliance
- If concerns of distal obstruction with stapled end, blow hole/mucous fistula of distal end to be incorporated into stoma



Excise stapled end
of colon





Post operatively



- HDU
- IV antibiotics
- Thromboprophylaxis
- Analgesia - PCA
- Mobilise and Chest physio
- Stoma therapy review and care

Complications



- Intraoperative – ureteric and splenic injury
- Post op - Wound infection
- Rectal stump leak
- Pelvic abscesses
- Colostomy retraction
- Peristomal Skin irritation
- Paralytic ileus
- Mortality estimated to be around 13% if Hinchey's III and 43% if Hinchey's IV