# Abdominoperineal Proctectomy for Benign Disease

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## Indications

Inflammatory bowel disease, including ulcerative colitis and Crohn's colitis with intractable rectal involvement that precludes restorative proctocolectomy

## Preoperative Preparation

See Chap. 57.

## Pitfalls and Danger Points

Operative damage to or interruption of pelvic autonomic nerves in male patients, leading to sexual impotence or failure of ejaculation

Pelvis sepsis, especially in patients who have perineal fistulas

Inadequate management of perineal wound, resulting in a chronic perineal draining sinus

## Operative Strategy

Abdominoperineal proctectomy is not a cancer operation. Resection should be conservative, and every attempt should be made to avoid damage to adjacent structures.

Transection of the hypogastric *sympathetic* nerve trunks that cross over the anterior aorta causes ejaculatory failure in men. Beyond the aortic bifurcation, these nerves diverge into two bundles going toward the region of the right and left hypogastric arteries, where they join the inferior hypogastric plexus on each side. The *parasympathetic* sacral autonomic outflow may be interrupted if the lateral ligaments are divided too far lateral to the rectum or if the nerve plexus between the rectum and prostate is damaged. Parasympathetic nerve damage results in failure of erection. Proper strategy requires that the mesentery in the region of the rectosigmoid be divided along a line just adjacent to the colon, leaving considerable fat and mesentery in the presacral space to protect the hypogastric nerves. The remainder of the pelvic dissection should be carried out as close to the rectum as possible, *especially in the region of the lateral ligaments and prostate*.

So long as there are no multiple perineal fistulas, it is generally possible to achieve primary healing of the perineum *if dead space between the closed levators and the peritoneal pelvic floor is eliminated*. Because there is no need for radical excision of the pelvic peritoneum, preserve as much of it as possible and mobilize additional pelvic peritoneum from the lateral walls of the pelvis and the bladder. If there is sufficient peritoneum to permit the pelvic peritoneal suture line to come down easily into contact with the reconstructed levator diaphragm, close this layer. Otherwise it is much better to leave the pelvic peritoneum entirely unsutured to permit the small bowel to fill this space. To aid in preventing perineal sinus formation due to chronic low-grade sepsis, insert closed-suction catheters into the presacral space and instill an antibiotic solution postoperatively.

Lyttle and Parks (1977) advocated *preservation of the external sphincter muscles*. They begin the perineal dissection with an incision near the dentate line of the anal canal and continue the dissection in the intersphincteric space between the internal and external sphincters of the anal canal. Thus the rectum is cored out of the anal canal, leaving the entire levator diaphragm and external sphincters intact. We have used this technique and found that it causes less operative trauma, minimizes dead space, and may further reduce the incidence of damage to the prerectal nerve plexus.

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## Operative Technique

### Abdominal Incision and Position

With the patient positioned on Lloyd-Davies leg rests, thighs abducted and slightly flexed, make a midline incision from the mid-epigastrium to the pubis (see Fig. 53.3a). If the patient has previously undergone subtotal colectomy with ileostomy and mucous fistula, free the mucous fistula from its attachments to the abdominal wall. Ligate the lumen with umbilical tape and cover it with a sterile rubber glove.

### Mesenteric Dissection

Divide the mesentery between sequentially applied Kelly clamps along a line *close to the posterior wall* of the rectosigmoid. Continue the line of dissection well into the presacral space. This leaves a considerable amount of fat and mesentery behind to cover the bifurcation of the aorta and sacrum (Fig. 58.1). The fat and mesentery prevent injury to the hypogastric nerve bundles, which travel from the preaortic area down the promontory of the sacrum toward the hypogastric vessels on each side to join the hypogastric plexuses on each side (see Figs. 53.4 and 53.6).

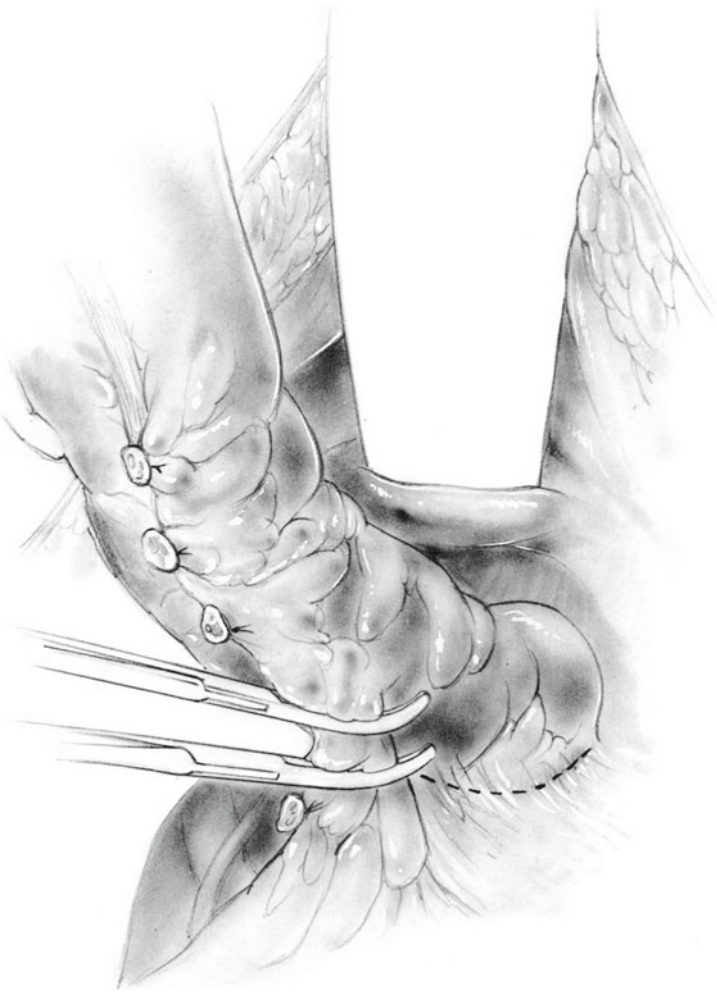

**Fig. 58.1**

### Rectal Dissection

Incise the pelvic peritoneum along the line where the peritoneum joins the rectum, preserving as much peritoneum as possible. Accomplish this first on the right and then on the left side (see Fig. 53.5). Note the location of each ureter (see Fig. 53.6). Divide the posterior mesentery to the mid-sacral level. The posterior wall of rectum can now be seen, as at this point the blood supply of the rectum comes from the lateral wall of the pelvis. Elevate the rectum from the distal sacrum by blunt dissection and with Metzenbaum scissors incise Waldeyer's fascia close to the rectum. Draw the rectum in a cephalad direction and place the peritoneum of the rectovesical or rectouterine pouch on stretch. This peritoneum can now be divided easily with Metzenbaum scissors. Division of the lateral ligament can also be accomplished with good hemostasis by inserting a right-angle clamp underneath the ligament and dividing the overlying tissue with electrocautery (see Fig. 53.9).

With cephalad traction on the rectum and a Lloyd-Davies retractor holding the bladder forward, divide Denonvilliers' fascia at the level of the proximal portion of the prostate (see Fig. 53.11b). Keep the dissection *close to the anterior rectal wall*, which should be bluntly separated from the body of the prostate. In female patients, the dissection separates the rectum from the vagina. When the dissection has continued beyond the tip of the coccyx posteriorly and the prostate anteriorly, initiate the perineal dissection.

### Perineal Incision

Close the skin of the anal canal with a heavy purse-string suture (Fig. 58.2). Then make an incision circumferentially in the skin just outside the sphincter muscles of the anus. Carry the dissection down *close* to the outer margins of the external sphincter to the levator muscles (Fig. 58.3). The inferior hemorrhoidal vessels are encountered running toward the rectum overlying the levator muscles. Occlude these vessels by electrocautery. After the incision has been deepened to the levators on both sides, expose the tip of the coccyx. Transect the anococcygeal ligament by electrocautery and enter the presacral space posteriorly. The fascia of Waldeyer, which attaches to the anterior surfaces of the lower sacrum and coccyx and to the posterior rectum, forms a barrier that blocks entrance into the presacral space from below even after the anococcygeal ligament has been divided.

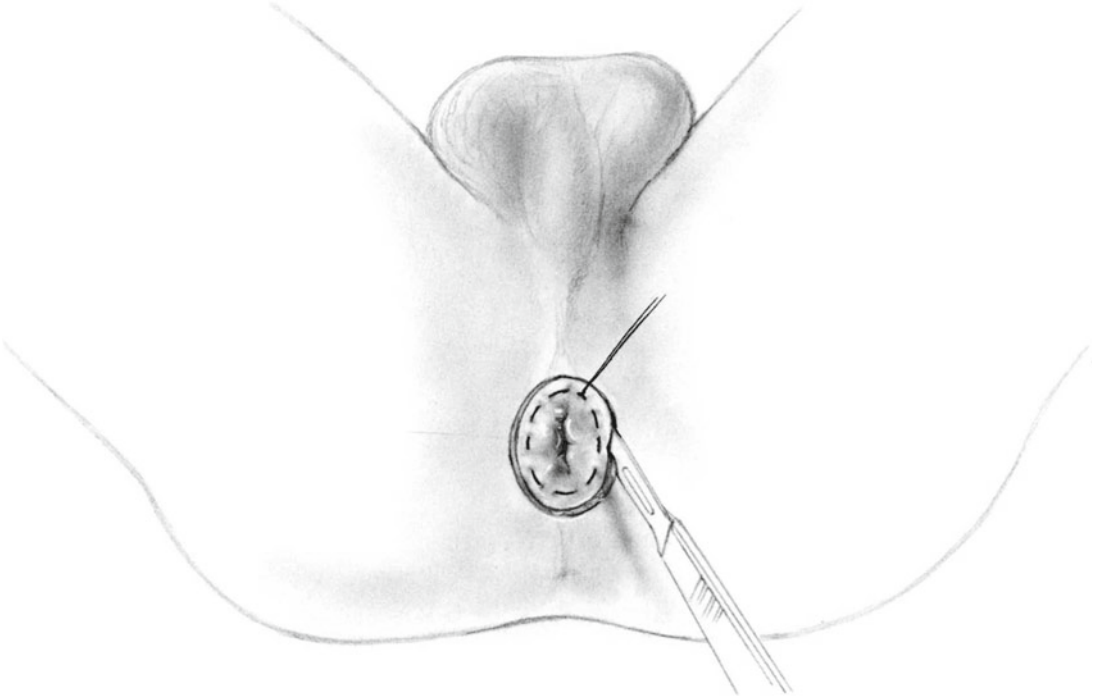

**Fig. 58.2**

If this fascia is elevated from the sacral periosteum by forceful blunt dissection in the perineum, venous bleeding and damage to the sacral neural components of the nervi erigentes may occur. Consequently, divide this *sharply* from above (Fig. 53.10) or below before an attempt is made to enter the presacral space from below.

### Division of Levator Diaphragm

From the perineal approach, insert the left index finger into the opening to the presacral space and place it in the groove between the rectum and the levator muscles. Use electrocautery to divide the levators close to the rectum on either side. Then deliver the specimen from the presacral space down through the posterior perineum, so the anal canal is attached only anteriorly. Visualize the prostate gland. Using electrocautery, transect the puborectalis and rectourethralis muscles close to the anterior rectal wall. Carry this dissection down to the level of the prostate and remove the specimen.

### Closure of Pelvic Floor

Insert one or two large (6 mm) plastic catheters through the skin of the perineum and the levator muscles into the presacral space for closed-suction drainage. Alternatively, these drains may be brought up from the presacral space into the pelvis and out through puncture wounds of the abdominal wall.

Close the defect in the levator diaphragm using interrupted sutures of 2-0 PG after thoroughly irrigating the pelvis with an antibiotic solution and achieving perfect hemostasis (Fig. 58.4). Close the skin with subcuticular sutures of 4-0 PG. Attach the catheters to suction for the remainder of the procedure while an assistant closes the peritoneum of the pelvic floor with continuous 2-0 PG sutures using the abdominal approach.

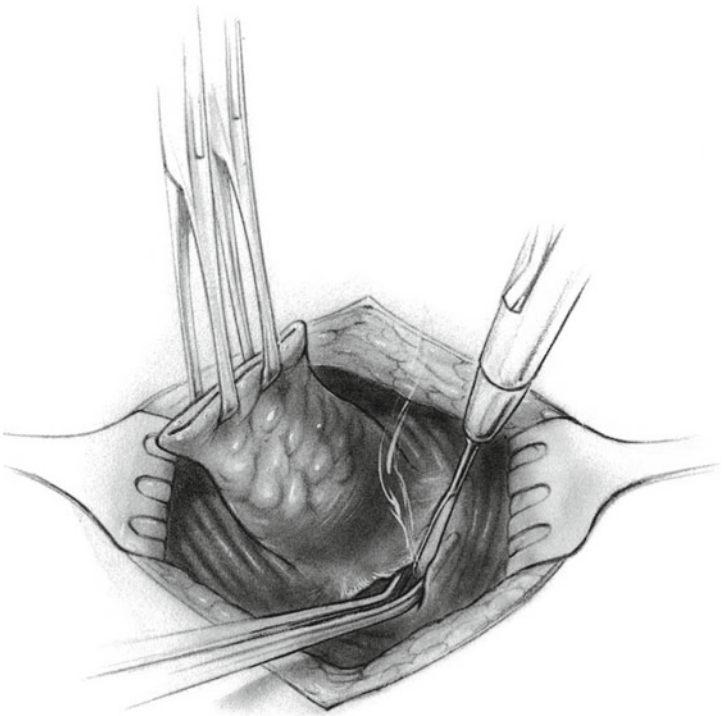

**Fig. 58.3**

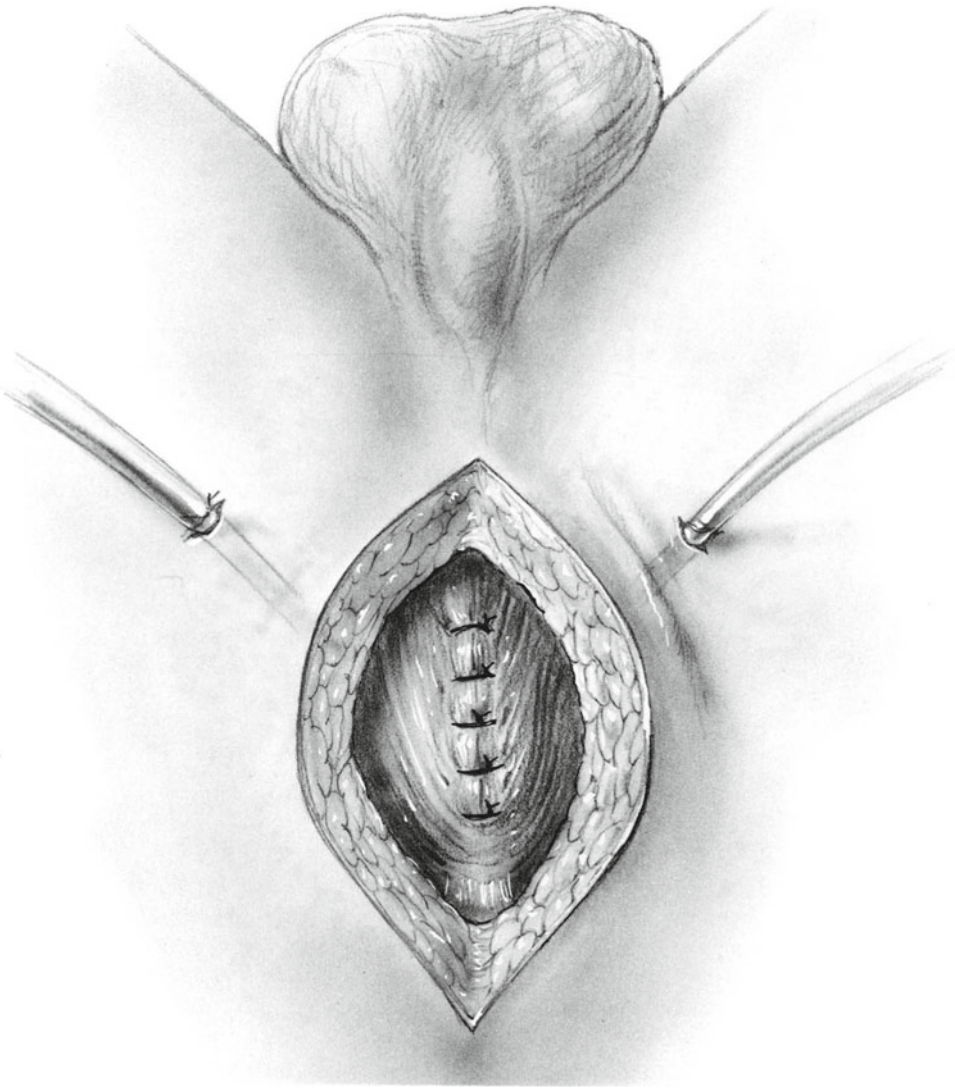

**Fig. 58.4**

## Ileostomy

Choose a suitable site and construct a terminal ileostomy as described in Chap. 59 (if not already performed during a previous operation).

## Abdominal Closure

After checking the integrity of the peritoneal pelvic suture line and making certain it is contiguous with the pelvic floor, irrigate the abdominal cavity and pelvis. Approximate the abdominal wall with interrupted sutures using the modified Smead-Jones technique.

## Postoperative Care

See Chap. 54.

## Complications

See Chap. 54.

## Further Reading

Lee JF, Maurer VM, Block GE. Anatomic relations of pelvic autonomic nerves to pelvic operations. Arch Surg. 1973;107:324.
Lyttle JA, Parks AG. Intersphincteric excision of the rectum. Br J Surg. 1977;64:413.