Ileal J Pouch-Anal Anastomosis
Current Technique

GARTH H. BALLANTYNE, M.D., JOHN H. PEMBERTON, M.D., ROBERT W. BEART, JR., M.D., BRUCE G. WOLFF, M.D., ROGER R. DOZOIS, M.D.

ENDORECTAL ILEOANAL ANASTOMOSIS is enjoying renewed popularity.1 This operation offers an attractive alternative to Brooke ileostomy in patients requiring proctocolectomy for chronic ulcerative colitis and familial polyposis coli. If a reservoir is constructed proximal to the anal anastomosis, better functional results are achieved than with a straight pull-through technique.1 Reservoirs may be J-shaped,2 S-shaped,3 or lateral-lateral.4,5 Since 1980, we have performed approximately 330 endorectal ileal pouch-anal anastomoses utilizing the J configuration. It is the aim of this report to describe our current standard operative technique.

Technique

With the patient in the Lloyd-Davies position, abdominal colectomy is performed in the standard manner with the following exceptions. The ileocolic artery and vein should be carefully preserved. The ileum is transected with a stapling device just proximal to the cecum. If necessary, the meso-appendix is divided separately. The retroperitoneal attachments of the terminal ileal mesentery are divided to the level of the duodenum, thus providing complete ileal mobility. Before proceeding with the pelvic dissection, the sigmoid colon is divided and oversewn. The abdominal colon is submitted for histologic examination while the operation proceeds. The diagnosis of chronic ulcerative colitis in patients with inflammatory bowel disease must be confirmed before the ileal pouch or anal anastomosis is constructed.

Received for publication September 25, 1984.
Address reprint requests to Dr. Pemberton: Mayo Clinic, Rochester, Minnesota 55905.

ENDORECTAL ILEOANAL ANASTOMOSIS is enjoying renewed popularity.1 This operation offers an attractive alternative to Brooke ileostomy in patients requiring proctocolectomy for chronic ulcerative colitis and familial polyposis coli. If a reservoir is constructed proximal to the anal anastomosis, better functional results are achieved than with a straight pull-through technique.1 Reservoirs may be J-shaped,2 S-shaped,3 or lateral-lateral.4,5 Since 1980, we have performed approximately 330 endorectal ileal pouch-anal anastomoses utilizing the J configuration. It is the aim of this report to describe our current standard operative technique.

Technique

With the patient in the Lloyd-Davies position, abdominal colectomy is performed in the standard manner with the following exceptions. The ileocolic artery and vein should be carefully preserved. The ileum is transected with a stapling device just proximal to the cecum. If necessary, the meso-appendix is divided separately. The retroperitoneal attachments of the terminal ileal mesentery are divided to the level of the duodenum, thus providing complete ileal mobility. Before proceeding with the pelvic dissection, the sigmoid colon is divided and oversewn. The abdominal colon is submitted for histologic examination while the operation proceeds. The diagnosis of chronic ulcerative colitis in patients with inflammatory bowel disease must be confirmed before the ileal pouch or anal anastomosis is constructed.

The proctectomy must be performed without injuring the nervi erigentes. This can be accomplished by staying within the correct fascial planes. An intra-mesenteric dissection is not necessary; by retracting the rectum out of the pelvis, the distinct fascia propria becomes conspicuous. This plane is developed sharply down into the pelvis as far as exposure permits. It is important to keep in mind that the rectum makes a right angle turn anteriorly at the level of S-3.

Throughout the pelvic dissection, firm traction on the rectum is essential. The lateral attachments of the rectum are divided sharply, close to the rectum. The anterior peritoneal reflection is incised. The dissection is carried down to the level of the coccyx posteriorly and circumferentially about the rectum as far distally as possible; i.e., the seminal vesicles or alternatively, most of the vagina, should be visualized. Care is taken not to violate Denovillier’s fascia anteriorly. A laparotomy pad is placed deep in the pelvis abutting the levators. This pad provides a landmark above which, in our experience, the endorectal mucosectomy need not be extended.

Constructing the “J” Pouch

The mobility of the terminal ileum is checked. Adequate length is available if a point on the antimesenteric aspect of ileum approximately 12 cm from the stapled end can be easily pulled beyond the skin overlying the symphysis pubis (Fig. 1). If this cannot be done, tension is placed on the loop of bowel and the area of tethering identified. Often the ileocolic vessels foreshorten the ileal mesentery. Under these circumstances, they are isolated with vascular clamps. If vascular pulsations remain vis-
ible along the terminal ileum, and the pouch remains viable, the vessels on tension are divided and ligated. Occasionally, secondary branches of the superior mesenteric vessels cause the tethering. These can be sacrificed if the ileocolic vessels are preserved.

Small enterotomies are then made 5 cm proximal to the apex, along the antimesenteric border of both limbs of the loop. The GIA® stapling device is first passed toward the pubis and activated (Fig. 2). Care is taken that no mesentery is included in the jaws of the stapler. A septum of tissue usually remains at the apex of the pouch where the stapler blades did not reach; this septum should be divided with the stapler. The instrument is then passed cephalad through the same enterotomies and activated (Fig. 3). This step is then repeated; the stapler must be positioned for the first and second cephalad firings such that little or no gap is left between the subsequent staple lines.

The resulting enterotomy (Fig. 4) is closed longitudinally with two layers of sutures. A layer of Lembert sutures may be placed to reinforce the stapled closure of the terminal ileum.

The apex of the pouch is inverted through its own mesentery exposing the posterior staple line. This is a critical step because the continuity of the overlapping staple lines posteriorly must be confirmed or the pouch will leak. Often, interrupted sutures are required to reinforce gaps where the GIA stapling device was not properly placed (Fig. 5). The pouch is passed back through its mesentery.