Modified Abdominotransanal Resection for Cancer of the Lower Third of the Rectum

NICOLA BASSO, M.D., STEFANO MINERVINI, M.D.,* MARCELLO MARCELLI, M.D.†

Basso N, Minervini S, Marcelli M. Modified abdominotransanal resection for cancer of the lower third of the rectum. Dis Colon Rectum 1987;30:641- 643.

A combined abdominoperineal approach is described in which not only coloanal anastomosis but also bowel transection were performed through the anus. It is most suitable for cancer located 4 to 6 cm from the anal verge. The main advantages of the technique are precise lines of bowel transection with desired distal clearance of tumor, and easier and safer mobilization of the distal end of the rectum during the abdominal phase of the procedure. [Key words: Rectal cancer; Low anterior resection; Coloanal anastomosis; Sphincter-saving resection; Surgical technique]

HISTOPATHOLOGIC REVIEWS have shown that, in 90 percent of cases, distal intramural spread of adenocarcinomas of the rectum does not extend more than 1 cm from the lower edge of the tumor.[1-3] In the remaining 10 percent, distant metastases occur.[2] Clinical studies fail to show significant differences in survival between patients with low-lying cancer of the rectum treated by either abdominoperineal resection or by sphincter-saving procedures such as anterior resection.[4-6] However, eradication of tumor by anterior resection may be technically demanding for lesions located between 4 and 6 cm from the anal verge. During the classic anterior resection, it is almost always difficult to see the critical lower margin of the lesion. Blind dissection may predispose to perforation with spillage of bowel content and tumor cells and may also result in unnecessary distal mobilization.

Recieved for publication April 2, 1987.

Address reprint request to Dr. Basso: Semeiotica Chirurgica VI, Policlinico Umberto I, 00161 Rome, Italy.

From the Semeiotica Chirurgica VI and Clinica Chirurgica VI, Università "La Sapienza," and the Patologia Chirurgica, Università de L' Aquila,† Rome, Italy*

Technique

The abdomen is entered and explored with the patient in the Lloyd-Davies position. If the lesion is judged resectable, the operator moves to the perineum. Four monofilament stay sutures are placed around the anal sphincter, which is stretched so that the anal canal is exposed and the lower margin of the tumor clearly visualized. When necessary, a Fansler speculum is used. Adrenaline, 1:300000 solution, is injected circumferentially in the bowel layers below the tumor. Under direct vision both the mucosa and the muscular layers are transected 1.5 to 2 cm below the lower margin of the tumor (Fig. 1). The proximal rectal stump is then closed by a simple over-and-over suture (Fig. 2). Four stay sutures are placed in the margin of the distal stump and left in place as a guide to subsequent coloanal anastomosis. An anterior resection of the colon and rectum bearing the tumor is then performed. The proximal colon is mobilized up to the middle colic vessels. Mobilization of the rectum is facilitated by having the severed end in order to identify that the resection encompasses all the tumor (Fig. 3). The proximal end of the colon is then brought down to the level of the rectal stump and a coloanal anastomosis is performed through the anus with one-layer 000 absorbable interrupted suture technique. Occasionally there may be sufficient length to the rectal segment to allow the use of a

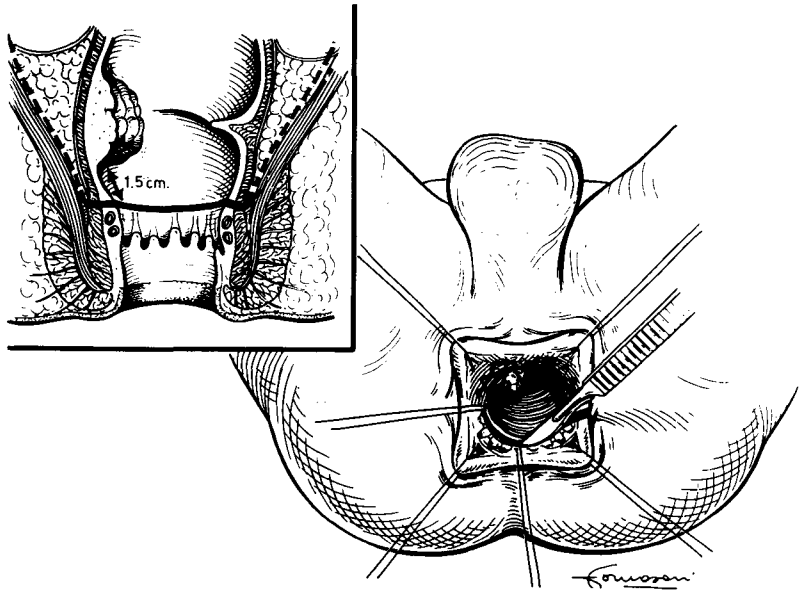

FIG. 1. Four monofilament stay sutures placed around the anal sphincter facilitate the exposure. The mucosal and muscular layers of the rectum are sectioned transanally. Four stay sutures in the margin of the distal stump are left in place. Inset: the rectum is transected 1.5 cm below the tumor (solid line).

stapling device. Finally, a transperineal soft drain is placed in the pouch of Douglas and a proximal colostomy established.

Discussion

This procedure has been used in three patients with Dukes' B adenocarcinoma located 4, 4, and 5 cm above the anal verge. At histology the distal margin of resection was free of tumor spread in all cases. Postoperatively one patient experienced temporary urinary dysfunction and one patient wound infection. There have been no operative or hospital deaths. At six, seven, and 12 month

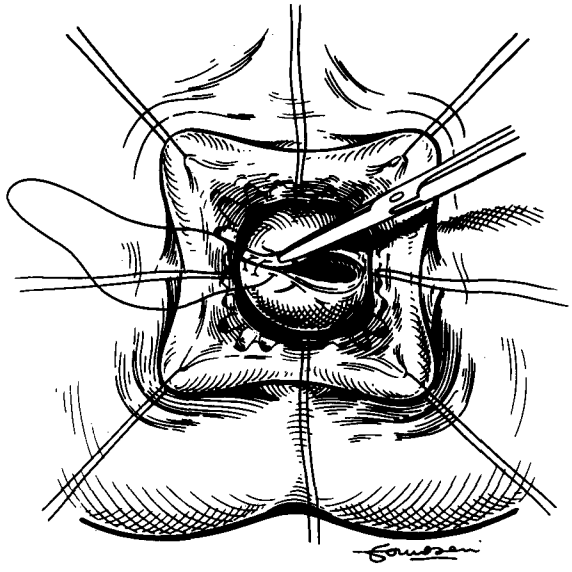

FIG. 2. The mucosal and muscular layers of the rectum have been completely transected transanally. The proximal rectal stump is being closed.

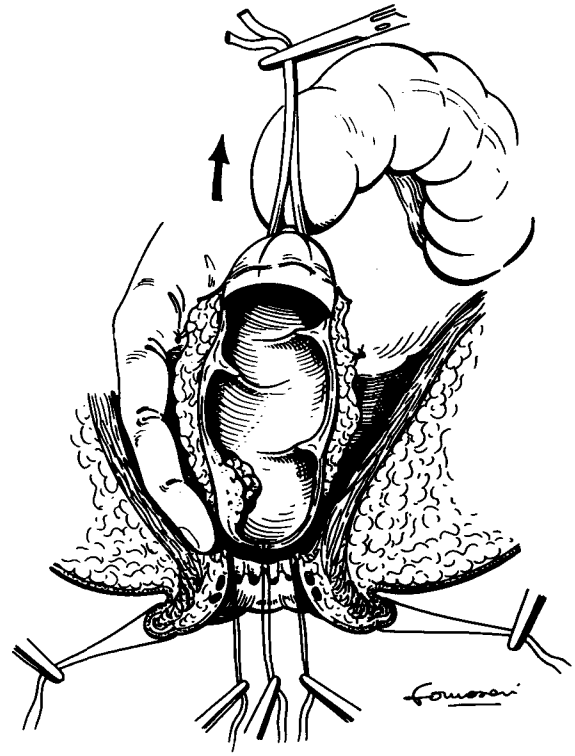

FIG. 3. The anterior resection of the rectum is facilitated by having previously severed the viscus. The extent of distal excision has been precisely predetermined.

follow-up all patients are continent and free of recurrent tumor.

The technique differs from the Romualdi-Soave operation[7,8] and the Parks "sleeve" type of peranal anastomosis[9] in that, for these operations, only the mucosal layer is divided and then stripped off the muscle wall for several centimeters. In the procedure described herein, the proximal end of the rectum is completely severed from the distal end. If two teams are available, a synchronous combined approach, just as in the classic Miles' operation, may be used to considerably reduce operating time.

References

1. Quer EA, Dahlin DC, Mayo CW. Retrograde intramural spread of carcinoma of the rectum and rectosigmoid. Surg Gynecol Obstet 1953;96:24-30.
2. Williams NS, Dixon MF, Johnston D. Reappraisal of the 5 centimetre rule of distal excision for carcinoma of the rectum: a study of distal intramural spread and of patients' survival. Br J Surg 1983;70:150-4.
3. Madsen PM, Christiansen J. Distal intramural spread of rectal carcinomas. Dis Colon Rectum 1986;29:279-82.
4. Jones PF, Thomson HJ. Long term results of a consistent policy of sphincter preservation in the treatment of carcinoma of the rectum. Br J Surg 1982;69:564-8.
5. Pollett WG, Nicholls RJ. The relationship between the extent of distal clearance and survival and local recurrence rates after curative anterior resection for carcinoma of the rectum. Ann Surg 1983;198:159-63.
6. Williams NS, Johnston D. Survival and recurrence after sphincter saving resection and abdominoperineal resection for carcinoma of the middle third of the rectum. Br J Surg 1984;71:278-82.
7. Romualdi P. Eine neue operationstechnik fur die behandlung einiger rectummiBbildungen. Langenbecks Arch 1960;296:371-6.
8. Soave F. Hirschsprung's disease: technique and results of Soavé operation. Br J Surg 1966;53:1023-7.
9. Parks AG. Per-anal anastomosis. World J Surg 1982;6:531-8.