Simple Method for Stapled Low Colorectal or Coloanal Anastomosis

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A technique of stapled low colorectal or coloanal anastomosis is described, which follows eversion through the anus and stapled closure of the anorectal or anal remnant. The procedure is rapid and safe, and allows a secure distal clearance under direct visual control when dealing with tumors of the lower third of the rectum. [Key words: Rectal cancer; Gastrointestinal anastomosis; Low anterior resection; Coloanal anastomosis; Surgical technique]

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VERY LOW ANTERIOR anastomoses have become easier and safer with the introduction of modern circular stapling devices. Recently, a simple technique of stapled anastomosis, which follows abdominal closure of a short rectal stump by means of a linear TA 55™ stapler, has been described.[1] When dealing with a narrow pelvis and very low rectal tumors, however, it can be uncomfortable and unsafe to close the rectum or to insert the lower purse-string suture by the abdominal route. In these instances, we prefer to evert the closed anorectal segment, perform an extra-anal resection of the tumor-bearing rectal segment, and then perform a stapled anastomosis after pushing the stump back into the perineum.

Technique

The rectum is fully mobilized down to the levator ani muscle, through transection of the lateral ligaments and mesorectum. The distal rectum is circumferentially dissected from perirectal fat. At this point the pelvis is fully lined with compresses to minimize any possible neoplastic or bacterial contamination. The rectum is divided a few centimeters above the tumor. A long nylon or silk string is introduced through the anus with a long Klemmer clamp or equivalent instrument; the inner extremity of this string is secured to a needle and used to close the rectum with a simple running suture, while its opposite extremity protrudes from the anus. The proximal rectum with dissected mesorectum, perirectal fat (including that divided from the distal remnant), and sigmoid colon are removed, as for a standard low anterior resection. By gentle traction on the string and simultaneous pushing from the pelvis, the anorectal remnant is pulled out and completely evaginated through the anus. The exact location of the tumor is appreciated and the stump is closed at the level of the anal canal or immediately above it, depending on the distance of the tumor from the anus, at a minimum of 2 cm from the lesion, by means of a TA 55, 4.8—Roticulator linear device (United States Surgical Corporation, Norwalk, Connecticut) (Fig. 1). The rectal-bearing tumor is resected and the closed anorectal stump or anal canal is pushed back into the perineum. A low colorectal or coloanal anastomosis is performed, using a Premium™ CEEA-31 stapler (United States Surgical Corporation), as described by Knight and Griffen[1] (Fig. 2).

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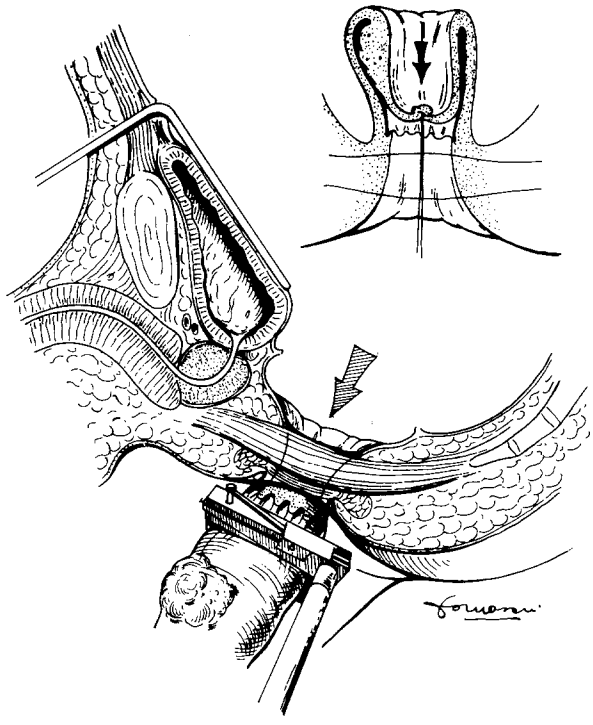

FIG. 1. The anorectal remnant is fully everted through the anus and closed at a minimum 2 cm from the tumor, by means of a linear stapler.

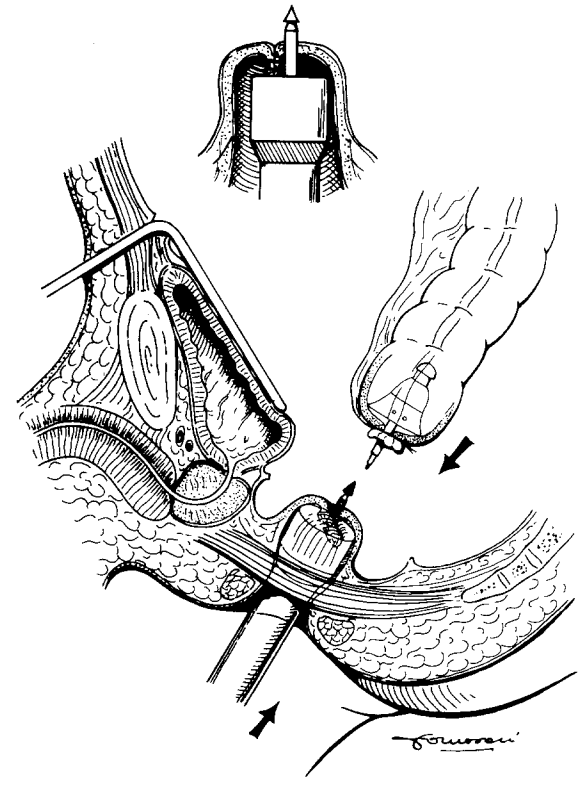

FIG. 2. The stump has been pushed back in the perineum. A Premium CEEA (USSC) stapler with trocar is inserted and the center rod is advanced through the stab wound on the posterior aspect of the stump. The pursestring is tied, the anvil is fitted to the rod, and the stapler is fired.

This technique enables the surgeon to resect the rectum with the tumor under direct vision, so that a distal clearance can be obtained, which is at a convenient distance from the lesion (minimum, 2 cm).

Stapled closure of the everted anorectal stump before anastomosis adds the advantage of rapidity and safety, when the application of a linear stapler or a pursestring device to the pelvis from the abdomen would be particularly difficult. Clinical experience consists of eight patients with cancer 4.5 to 6 cm from the anal verge (Dukes' Stage A, B1, B2) treated with this method with good results. Careful removal of the perirectal tissues (including distal tissues, even if these were not *en bloc* with the viscus for the necessity of eversion) was always achieved, as confirmed by a mean number of 15 lymph nodes recovered in the specimen (range, 10 to 18).

This method seems to be a suitable option whenever sphincter preservation is indicated, after low anterior resection or total removal of the rectum, and a full abdominal procedure is, for any reason, difficult or not feasible.

Reference

1. Knight CD, Griffen FD. An improved technique for low anterior resection of the rectum using the EEA stapler. Surgery 1980;88:710-14.