

## Brief Clinical Report

# Laparoscopically Assisted Anterior Rectal Wall Resection and Reanastomosis for Deeply Infiltrating Endometriosis

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**Summary:** A 28-year-old woman, presented with a history of long-standing, severe pelvic and bowel endometriosis. Pronounced cul-de-sac tenderness and nodularity were noted on pelvic examination. Videolaseroscopy was undertaken, the rectum was mobilized, and the tumor was prolapsed to the level of the anus. Anterior rectal wall resection and reanastomosis were performed; the colon was returned to the pelvis under direct visualization via laparoscope.  
**Key Words:** Laparoscopy—Bowel resection—Bowel reanastomosis.

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Laser laparoscopy was first reported by Bruhat et al. (1) (second puncture), Tadir (2) (joy stick via operative laparoscope) and their colleagues. In this country, several investigators reported on the use of the CO<sub>2</sub> laser via second puncture techniques or operative channel of laparoscope via a joy stick (3-8). Due to some difficulties associated with use of the CO<sub>2</sub> laser it has been abandoned by some (8a). We did not have favorable results with the use of fiber lasers (8b); thus we modified the use of the CO<sub>2</sub> laser via the operative channel of the laparoscope by direct coupler without a joy stick and by adding the video camera to the eyepiece of the laparoscope (video laseroscopy) (5,10,14). We have used this technique for the treatment of mild to extensive endometriosis and we reported our results as early as 1986 (5,10,13,14).

Endometriosis involves the colon in 5% of cases. Of those cases, 76% involve the rectum or rectosigmoid area (9). Bowel resection by laparotomy has been indicated for deeply infiltrating lesions, and is associated with a significant risk of operative mor-

bidity, possible colostomy, and protracted recovery.

Based on our experience with advanced operative laparoscopy, we have devised a new technique for bowel resection of the distal colon which avoids laparotomy.

### CASE REPORT

A 28-year-old woman, G<sub>1</sub>, P<sub>1</sub>, presented with a history of long-standing, severe pelvic and back pain, constipation, rectal pain and bleeding at the time of menstruation. A diagnosis of severe endometriosis, including rectal involvement, had been made prior to admission. At the present admission, pronounced cul-de-sac tenderness and nodularity were noted on pelvic examination.

### OPERATIVE TECHNIQUE

Operative laparoscopy (videolaseroscopy), described in detail elsewhere (10,11,13,14), was undertaken and lysis of adhesions, vaporization, and excision of endometriosis were accomplished. During the procedure, the rectum was freed from the posterior aspect of the uterus with the aid of hydrodissection techniques (11). A 3.5 cm endometriotic

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nodule was then noted on the anterior rectal wall, approximately 10 cm from the anal opening. Endoscopic examination and evaluation suggested complete penetration to the mucosa, and a colorectal surgeon was consulted. Sigmoidoscopy confirmed a deep lesion.

The rectovaginal septum was delineated by the assistant, who performed simultaneous vaginal and rectal examinations; the rectum was mobilized along the rectovaginal septum anteriorly to within 2 cm of the anus, using CO<sub>2</sub> laser and hydrodissection (11). Mobilization continued along the left and right pararectal spaces by cauterizing and dividing branches of the hemorrhoidal artery, and partially posteriorly, as well.

When the rectum was sufficiently mobilized, the tumor was prolapsed to the level of the anus, the perineal body was retracted and an RL 30 (Ethicon) multifire stapler was applied across the segment of the anterior rectal wall containing the nodule. Two staple applications were required to traverse the width of the involved mucosa. The tumor nodule was then excised using electrocautery, and two additional interrupted 2-0 Vicryl sutures were inserted along the staple line.

The rectum was returned to the pelvis under direct visualization via laparoscope and attached video monitor. Insufflation of air into the rectum while the cul-de-sac was filled with saline produced no air bubbles, and sigmoidoscopic inspection confirmed an intact suture line. The procedure took 160 min with blood loss estimated at <100 cc.

The patient tolerated clear liquids on the first postoperative day and was discharged on the second day. Recovery was uneventful. At eight weeks following surgery the patient was doing well, with no constipation, rectal pain, or bleeding. Pathology reported extensive endometriosis in the muscularis and submucosa of the rectum.

#### DISCUSSION

Operative laparoscopy has become a safe, cost-effective alternative to laparotomy for the treatment of endometriosis. It produces good results while avoiding prolonged hospitalization, recuperation, and producing less adhesion formation (10,13). In cases in which endometriosis has penetrated the bowel, however, laparotomy has been necessary.

Coronado et al (12) have recently reported on their experience with 77 cases of deep rectal endometriosis. As they point out, rectal endometriosis is

often treated inadequately by gynecologists who are uncomfortable treating the colon, and general surgeons who are unfamiliar with endometriosis. With a team approach, they have accomplished bowel resection at laparotomy without colostomy or serious surgical morbidity. Thirty-nine of their patients chose to preserve fertility, and 39% achieved a term pregnancy. Relief of pelvic symptoms occurred in all but 12% of their patients, and no long term recurrences have been noted.

Our team of experienced advanced laparoscopists (C.N. and F.N.), and a colorectal surgeon (E.P.), devised a method for performing rectal wall resection without the need for laparotomy, thereby further reducing the risk of surgical morbidity and adhesion formation (13). Because endometriosis tends to occur in the distal colon, this method can prove useful in most deeply invasive endometriosis of the bowel.

Dissection of severe endometriosis and mobilization of the rectum are tedious and delicate procedures, which must only be undertaken by surgeons with appropriate levels of expertise in operative laparoscopy. Caution was exercised to achieve complete hemostasis and avoid excessive intraoperative blood loss by dissecting in the correct pararectal and rectovaginal planes. The possibility of complete bowel ischemia was precluded by maintaining blood supply posteriorly. Finally, adequacy of reanastomosis was tested sigmoidoscopically at the conclusion of the procedure.

#### CONCLUSION

Deep endometriosis of the rectosigmoid wall was transected without laparotomy. Operative laparoscopic techniques allowed mobilization of the involved rectal area, which was then prolapsed through the anus and removed extracorporeally.

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