Delving deep into excision of bowel endometriosis

Endometriosis is a chronic, benign gynecologic disease characterized by implantation of endometrium-like tissue outside of the uterus. Pathogenesis is complex and likely multifactorial with environmental, genetic, epigenetic, immunologic, and other unknown factors contributing to development of disease. It is present in an estimated 6%–10% of reproductive-aged women and may present with a variety of symptoms and phenotypes. Although some women are asymptomatic, others may suffer from painful menses, dyspareunia, infertility, dyschezia, painful bladder symptoms, and chronic pelvic pain. Subtypes of endometriosis include superficial endometriosis, deeply infiltrating endometriosis (extension of disease >5 mm beneath the peritoneum), and endometrioma (ovarian cyst). Lesions are located most commonly in the pelvic peritoneum, ovaries, and uterosacral ligaments, however, they also may involve other structures including the bowel (1). Bowl endometriosis has been reported to occur in 3.8%–37% of patients with endometriosis. Although isolated bowel endometriosis has been reported, the majority of these patients also have endometriosis involving other structures. The most common bowel site affected by endometriosis is the rectosigmoid colon, although lesions may be present in other sections of the bowel as well including ileum, appendix, cecum, and transverse colon (2).

In the video article by Hanacek et al. (3) in this issue, the authors demonstrate surgical management of deeply infiltrating endometriosis in a 39-year-old patient with 3.8-cm nodule involving the rectosigmoid colon located 9 cm from the anal verge. Her symptoms included infertility, painful menses, dyspareunia, dyschezia, and acyclic pelvic pain. The authors eloquently describe a novel laparoscopic technique for segmental bowel resection using a circular stapler, enabling complete excision of disease with a single staple line.

The authors illustrated preoperative diagnosis deeply infiltrating endometriosis of the bowel with pelvic ultrasound (US) (3). This imaging modality is one of several reported in the literature to aid with diagnosis of bowel endometriosis. Transvaginal pelvic ultrasound in addition to physical examination has a reported sensitivity and specificity of 71%–98% and 92%–100%, respectively, with diagnostic accuracy correlating with sonographer experience (1, 2). The four specific steps recommended for pelvic US in patients with suspected endometriosis include evaluation of the uterus and adnexa, assessment of specific tender spots identified with the US probe, investigation of possible obliteration in the posterior cul de sac, and evaluation of the anterior and posterior cul de sac for deeply infiltrating nodules (1). Although pelvic US may help identify size, depth, and location of lesions in the rectosigmoid colon, lesions present above the sigmoid colon are generally out of the field of view for this type of imaging study. Magnetic resonance imaging also may be used to aid in preoperative evaluation of possible deeply infiltrating endometriosis of the bowel with reported sensitivity and specificity of 88% and 97.8%, respectively (1, 2). Further evaluation for possible deeply infiltrating endometriosis should be considered in those with suspicious symptoms or findings on physical examination. Additionally, those with endometriomas at increased risk of having deeply infiltrating endometriosis and with higher severity of disease (4).

Once identified, patients with bowel endometriosis may be managed expectantly, medically, or surgically. Medical management, similar to endometriosis not involving the bowel, focuses on hormonal suppression with no established optimal hormonal regimen for deeply infiltrating endometriosis of the bowel. Surgical management is recommended particularly in those with symptoms refractory to medical management, evidence of obstruction, or features on imaging concerning for neoplasia. Risk for endometriosis-associated neoplasia has been estimated to be up to 1%, which includes gastrointestinal tumors related to endometriosis (2).

Laparoscopic management of bowel endometriosis results in shorter length of stay, lower blood loss, fewer postoperative complications, and higher postoperative pregnancy rates when compared with laparotomy. Excision of bowel disease may involve shaving, disc, or segmental resection. The type of resection used depends on the location of the lesion, depth and circumference of involvement, and number of nodules present. Shaving excision involves removing the bowel lesion and associated fibrosis while keeping the bowel mucosa and a portion of the muscularis layer intact with subsequent reinforcement of interrupted sutures. Disc resection involves full-thickness removal of the diseased portion of the bowel wall, typically less than half of the maximum bowel circumference. Segmental resection involves complete removal of the segment of bowel involved with endometriosis with subsequent reanastomosis (2). The authors demonstrate a novel technique to accomplish the latter in their video (3).

Segmental resection usually is required if lesions are >3 cm in length or involve more than one third of the bowel lumen. Multifocal lesions also may require segmental resection (2). As illustrated by the authors in their informative video, traditional laparoscopic segmental resection involves use of a linear stapler to excise the affected segment of bowel proximal and distal to the lesion before performing a reanastomosis using a circular stapler. Unfortunately, with more distal lesions, it can be difficult to place a linear stapler directly across the lumen of the bowel, resulting in an angular resection line or incomplete resection with a single staple load. Additionally, the overlap that occurs between the linear and circular staple lines creates a potential area of weakness that increases risk of postoperative bowel leak at the anastomosis site. Use of this novel approach to segmental bowel resection for endometriosis alleviates the limitations associated with current linear staplers lower in the pelvis and removes the vulnerable intersection point of crossing staple lines (3).

It is still unknown whether this novel approach leads to lower postoperative morbidity and specifically lower rates of anastomotic bowel leaks. Nonetheless, this innovative
technique holds much promise for women with deeply infiltrating bowel disease, especially low in the pelvis.

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