Deep endometriosis compromising the rectum continues to be a diagnostic and therapeutic challenge. The resultant pelvic pain, dyspareunia, dysmenorrheia, and infertility risk are well documented in literature. Despite the fact that there are numerous studies to evaluate deep endometriosis, including colonoscopy, MRI, vaginal and rectal ultrasound, and barium enema, there continues to be no standard road map for evaluation. In addition, there continues to be debate in the literature when patients should undergo shaving of the endometrioma, discoid resection of the endometrioma, or complete bowel resection.

Since the inception of the Master Class in Gynecologic Surgery, as Editor, I have used only experts who practice within the confines of the United States. However, given the internationally recognized expertise in both the diagnosis and treatment of deep and extensive endometriosis, I believed it was imperative to invite Dr. Mauricio S. Abrão to discuss the diagnosis and treatment of deep endometriosis compromising the rectum.

Dr. Abrão was born in São Paulo, Brazil in 1962, where he went on to complete medical school, and in 1988, his residency in obstetrics and gynecology. In 1989, Dr. Abrão founded the endometriosis division within the department of the teaching hospital of the University of São Paulo School of Medicine, where he currently is Docent Professor.

Since 2007, Dr. Abrão has been president of the Brazilian Society of Endometriosis and Minimally Invasive Endoscopy, and has been a board member of the World Endometriosis Society since 1998. He currently is on the board of trustees of the AAGL and is the chairman of the society’s special interest group on endometriosis. Dr. Abrão is leading the AAGL initiative on producing a new classification on endometriosis. A prolific author, Dr. Abrão has nearly 100 papers published in peer-reviewed journals, the majority dealing with endometriosis. It is with great admiration and respect that I introduce my friend, Dr. Abrão, to this edition of the Master Class in gynecologic surgery.

**Master Class**

**Rectal Endometriosis**

A disease that affects 10%-15% of women of reproductive age, endometriosis is quite prevalent. In 1990, investigators in Belgium first described deep endometriosis to highlight the diagnostic and therapeutic aspects of the disease (Fertil. Steril. 1990;53:978–83). In contrast to superficial disease, deep endometriosis constitutes the most severe form of endometriosis and includes nodules affecting the pouch of Douglas, retrocervical area, bladder, ureter, or the intestinal wall. Less frequently, the rectovaginal septum is involved (Arq. Gastroenterol. 2003;40:192-7). The treatment of bowel endometriosis is challenging, as it is a benign disease that may infiltrate the bowel, requiring a surgical treatment with increased risks.

**Preoperative Diagnosis Using Imaging**

The definitive diagnosis of deep endometriosis with bowel involvement is reached principally at the time of surgery. However, some clinical characteristics identified by history and physical examination, laboratory tests, and diagnostic imaging may raise suspicion for this form of endometriosis. A surgical approach is still recommended for confirmation and treatment.

Transvaginal ultrasonography (TVUS) is one of the most cost-effective and beneficial tools for cases of ovarian or deep endometriosis. The presence of a hypoechoic lesion located in the posterior pelvic compartment (see Figure 1) is suggestive of endometriosis, with diagnostic sensitivity greater than 95% for rectovaginal lesions and greater than 98% for rectal lesions (Hum. Reprod. 2007;22:3092-7).

When performed after complete bowel preparation and during the perimenstrual phase, TVUS carried out by a trained professional provides useful information for therapeutic management. MRI can be performed to identify deep lesions. (See Figure 2.) It provides a good map of the pelvis, but with lower accuracy than TVUS offers in predicting the depth of involvement of a bowel compromised by endometriosis. Similarly, opaque barium enema does not have a high degree of accuracy; its sensitivity is only 54%. Rec- tosigmoidoscopy or colonoscopy may be necessary to investigate the involvement of the intestinal lumen and to check other concomitant pathologies; however, this procedure has an estimated sensitivity of 51% and is frequently negative even in the presence of extensive intramuscular deposits of endometriosis.

Excretory urography or uro-MRI also is useful for evaluating whether the ureters are involved. When urinary tract involvement is suspected, one of these types of imaging should be performed to fully document the state of the urinary tract before surgery. If we have doubts about the bowel involvement even after TVUS with bowel preparation, we recommend rectal echoendoscopy. (See Figure 3 on the next page.) This was initially used for staging cases of rectal neoplasia prior to surgical treatment. Dr. T. Okhita and his associates in Japan were the first to use this tool to evaluate patients with endometriosis of the rectovaginal septum, using a linear transducer (Hum. Reprod. 1996;11:2014-7). They described how the presence of irregular images, when associated with clinical symptoms, was suggestive of endometriosis.

Rectal echoendoscopy also permits identification of the distance between the lesion and the rectal lumen, as well as identification of extrinsic compression and lesions of the rectal submucosa. This information can be critical in the preoperative planning of the type of surgery required and the need to have the help of a colorectal surgeon. The chart on page 19 shows the algorithm for preoperative work-up depending on clinical and TVUS findings.

**Treatment: Clinical or Surgical?**

Medical treatment of deep endometriosis, as opposed to surgical treatment, remains controversial. Dr. Luigi Fedele and his associates in Italy reported a substantial improvement in pain during 6 months of treatment with GnRH analogs (Am. J. Obstet. Gynecol. 2000;183:1462-7). Similar improvements in pain were also observed by our group with both an intravenous device medicated with levonorgestrel and with a GnRH analog (Hum. Reprod. 2005;20:1993-8). In Dr. Fedele’s study, however, an early relapse occurred following discontinuation of treatment. In addition, the endometriotic lesions underwent a discrete but significant reduction in size as detected by TVUS during treatment, but returned to their original size 6 months after suspension of GnRH treatment.

In cases of intractable pain (measured by scores continued on following page
Deep endometriosis is associated with more severe pain and significantly greater rates of infertility, compared with superficial endometriosis. Because of the high risks of surgical intervention, preoperative diagnosis using imaging modalities can be helpful in planning surgical strategy. Improved outcomes are achieved with complete surgical resection, which can be performed through minimally invasive techniques.

Dr. Abrão reported that he has no relevant financial disclosures.

Download a mobile quick response (QR) code reader from your smartphone’s app store to view a video by Dr. Abrão, or visit www.aagl.org/obgynnews.

**Endometriosis**

**Presurgical Work-Up**

- TVUS (Bowel Preparation)
- Clinical Exam + Ca125
- NODS: No Disease or Early Stages
- Doubts
- Urinary Tract
- TVUS (Bowel Preparation)
- RV Septum/USL
- MRS: Malignant
- Conclusive
- Transrectal US
- Treatment

Source: Dr. Abrão

**Figure 3.** The rectal endoscopic ultrasound in a case of rectal endometriosis is on top, with the surgical finding on the bottom.

**Figure 4.** Nodule resection of an endometriotic lesion compromising the rectum is shown here.

**Figure 5.** A stitch is placed in the lesion in order to invaginate it into the stapler.

**Figure 6.** Here a ureter is identified before complete mobilization of the rectum.

**Figure 7.** This resected segment of rectosigmoid includes a 5 cm endometriotic nodule compromising the mucosa layer.

Deep endometriosis is associated with more severe pain and significantly greater rates of infertility, compared with superficial endometriosis. Because of the high risks of surgical intervention, preoperative diagnosis using imaging modalities can be helpful in planning surgical strategy. Improved outcomes are achieved with complete surgical resection, which can be performed through minimally invasive techniques.

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