

Preoperative assessment of rectosigmoid endometriosis: what imaging modalities are useful to the surgeon?

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Introduction

Complete radiologic mapping of deep infiltrative endometriosis sites is crucial for case management.

In rectosigmoid assessment, the degree of rectal wall infiltration, the size of the rectal lesions, and the distance from the anal border can influence its surgical management.

Objectives

To illustrate characteristic imaging findings with laparoscopic and pathologic correlations

To compare the value of
- transvaginal sonography (TVS)
- rectal endoscopic sonography (RES)
- water enema computed tomography (WECT)
- pelvic magnetic resonance imaging (MRI)

in the assessment of rectosigmoid endometriosis and preoperative planning.

Methods

Retrospective longitudinal study on 23 consecutive patients referred for surgical management of endometriosis between may 2009 and may 2011 at Paris Saint-Joseph Hospital.

They were underwent clinical examination, TVS, pelvic MRI, RES and WECT before videolaparoscopy.

MR imaging was performed with axial, sagittal and coronal T2-weighted sequences (fast spin-echo, repetition time: 6720 msec, echo time: 123 msec), and axial fat-suppressed T1-weighted sequences, with or without administration of intrathecal US gel, without injection of gadolinium.

• CT was performed with water enema and intravenous contrast medium.
  • TVS was performed without bowel preparation.
  • RES was performed after a simple rectal enema, under general anesthesia.

All scans were analyzed by the same radiologist (E.P.), who has extensive gynecological experience.

The women were operated with histological evidence of superficial or deep rectosigmoid pathology. The preoperative reports of these methods were correlated with histopathological confirmation of endometriosis.

Results

Case 1: Rectosigmoid endometriosis in a 28-year-old woman with dyshesia


- Sagittal WECT (a), sagittal (b) and axial (c) T2-weighted MRI demonstrating an infiltrative and retractile mass in the uterosacral ligament (arrow). The rectum is retracted toward the retrocervical lesion.

- RES (d) showing an irregular-shaped hypoechoic mass of the rectal wall (arrow). Involvement of the muscularis propria (hyperechoic and thin) was distinguished from that of the hyperechoic submucosa and mucosa (hypoechoic layers, stars). Note the normal aspect of the muscularis propria (head of arrow) of the adjacent rectum.

- At CT, MRI, RES and pathologic examination, the colon wall infiltration was graded as involving the muscularis propria layer of the rectum.

Case 2: Deep pelvic endometriosis in a 37-year-old woman with dyshesia and rectal bleeding


- Sagittal TVUS (a) and WECT (b) demonstrating a retractile colorectal lesion adhered to a thickening of the rectosigmoid junction.

- At sonography, the lesion is hypoechoic and irregular endometriotic lesion (arrow).

- Notice that TVS and RES readily visualized the rectosigmoid joint just behind the torus uterinus.

- Laparoscopic view (c) demonstrating bilateral involvement of the utero-sacral ligaments with retractile lesions adhering to the posterior uterine wall and infiltrating the anterior rectal wall.

- Photograph (d) of the gross specimen showing marked thickening and fibrosis of the muscularis mucosa.

- Medium-power photomicrograph (e and f) showing endometriotic glands and stroma showing endometriotic glands and stroma showing marked thickening and fibrosis of the muscularis propria.

Conclusion

- Depth of rectosigmoid wall infiltration is the main criterion determining patient management and is better assessed by RES.

- Distance between the endometrial foci and the anal border is a crucial aspect of patient counselling, to estimate the risk of ileostomy. WECT and RES can assess this distance, RES is more accurate.

- WECT is the only method to assess the plurifocal digestive lesions.

- MRI and TVS are complementary for the other pelvic localizations.

References


Note: All images are illustrative and not actual clinical cases.