



Rectovaginal Septum Endometriosis

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Introduction

Endometriosis is a condition where tissue similar to the endometrial stroma or glands is found in locations outside the uterus. The disease generally affects women during their reproductive years (more commonly in their 40s or 50s) and involves 7-10% of the female population ⁽¹⁾. Among women who undergo a diagnostic laparoscopy for infertility the prevalence of endometriosis is 20-50% ⁽²⁻³⁾. When chronic pelvic pain is associated, the prevalence can increase up to 80% ⁽⁴⁾.

The ectopic endometrium can be found inside the uterine wall (adenomyosis), or outside, either within the pelvic organs (internal pelvic endometriosis or deep pelvic endometriosis) or in organs and tissues outside the pelvic space (extrapelvic endometriosis). It is often divided into peritoneal, ovarian and deep pelvic endometriosis ⁽⁵⁾. It is most frequently localized to the ovaries, utero-sacral ligaments and peritoneum, then in the recto-vaginal septum, uterine tubes, rectosigmoid colon and bladder. Less frequent or rare localizations include the appendix, cervix, vagina, umbilicus, inguinal region, ureter, pleura, lung, limbs, and brain.

In deep pelvic endometriosis (DPE) the lesions are found more than 5 mm below the pelvic peritoneal surface. The estimated incidence of bowel endometriosis in DPE varies between 3% and 37% and in 90% of cases the involved tract is the rectum or the rectosigmoid colon ⁽⁶⁻⁷⁾. Several locations can be affected by DPE including the retro-cervical region, utero-sacral ligaments, rectum, rectovaginal septum, vagina, ureters and other extraperitoneal tissues.

The staging of the disease most commonly utilized has been proposed by the American Fertility Society in 1979 (AFS 1979), and then revised in 1985 (rAFS 1985). There are four stages:

- stage I (minimal)
- stage II (mild)
- stage III (moderate)
- stage IV (severe)

The staging is obviously only fully known after surgery and histological study.

Treatment is based upon the dimension, localization and extension of the lesions, severity of symptoms, age, the desire of the patient to become pregnant and associated infertility.

It is aimed at improving symptoms and fertility. Permanent resolution of the disease cannot be guaranteed. The main therapeutic options include pharmacological suppression of the ectopic tissue or surgical ablation.

The pharmacological treatment aims at reducing the estrogen level to retard the development of the disease. Systemic estroprogestins, progesteron, danazol and other gonadotropins are used.

Surgical therapy attempts to remove the lesions to achieve improvement of symptoms.

The approach is generally laparoscopic and allows confirmation of the diagnosis, in particular in the case of superficial localizations. Complete excision of the lesions can be obtained and the advantages of laparoscopy, in terms of mini-invasiveness, cosmetics and reduction in convalescence, are offered to the patient.

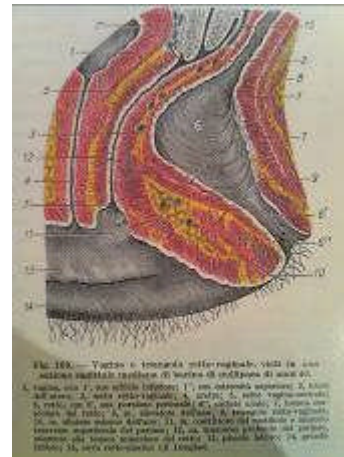
If laparoscopy is performed for fertility improvement a 44-72% pregnancy rate can be achieved ⁽⁸⁾.

Robotic surgery can be used in selected cases and is particularly useful for microsurgical reconstruction of the tubes damaged by endometriosis.

The Recto-Vaginal Septum

Does “rectovaginal septum” exist and if so what is it?

The posterior wall of the vagina lies is related to the rectum along its entire length. It has a direct relationship with the rectal wall only in its inferior three quarters, while in the upper quarter, the rectovaginal pouch of Douglas separates the two organs. The posterior vaginal wall can, therefore, be divided into two parts, a peritoneal and a rectal segment. In the latter lying below the pouch of Douglas, the vagina is applied to the rectum from which is separated only by a layer of connective tissue and small vessels. A few authors maintain that the space contains a fibrous layer, the true “rectovaginal septum” corresponding to Denonvilliers’ fascia of the male. The posterior attachments of the vagina to the rectum are much looser than those to the bladder, anteriorly, so in vaginal prolapse the rectum is less commonly drawn down than the bladder. The space between the vagina and the posterior rectal wall is very thin in the endopelvic part of the vagina, but in its lower, perineal part it is thicker, due to the posterior angle of the anal canal.



The thickness increases gradually and the rectum is separated from the vagina by a space that in sagittal section would be triangular with the base at the perineal skin. This is sometimes called the rectovaginal triangle. The rectovaginal septum is actually a virtual space that can be occupied by an enterocele or by pathologic tissue such as endometriosis nodules⁽⁹⁾.

Rectovaginal Septum Endometriosis

Definition

Rectovaginal endometriosis is the most important form of deep pelvic endometriosis⁽¹⁰⁾. Endometriosis nodules may be found below a plane drawn horizontally through the inferior margin of the cervix.

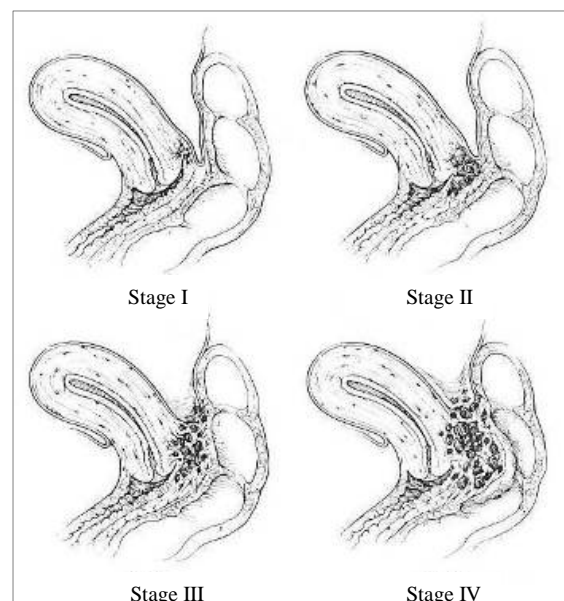
Classification

Adamyán devised a classification of retrocervical endometriosis according to the extent of the disease in the retrocervical area. This is also called the “rectovaginal pouch of Douglas” or the “posterior cul-de-sac”.

Classification of adamyán⁽¹¹⁾

- Stage I: Endometriosis lesions are confined to the rectovaginal tissue in the area of the vaginal vault
- Stage II: Endometriosis tissue invades the cervix and penetrates the vaginal wall, causing fibrosis and small cyst formation
- Stage III: Lesions spread into sacro-uterine ligaments and the rectal serosa

Stage IV: The rectal wall, rectosigmoid zone and recto-uterine peritoneum are completely involved, and the recto-uterine pouch is totally obliterated



Symptoms

Chronic pelvic pain is one of the most common and relevant symptoms. It is generally felt posteriorly and its intensity appears to be related to the depth of infiltration of the disease. It worsens during menstruation. Pelvic pain can be associated with deep dyspareunia, tenesmus and rectal bleeding related to the degree of involvement of the rectal wall.

Diagnosis

The history is essential in raising the suspicion of recto-vaginal endometriosis. Generally the patient experiences a sensation of being seated on a thorn. Pain occurs during the menstrual cycle and sexual intercourse. A combined vaginal and rectal examination is diagnostic in more than 80% of cases ⁽⁶⁾. Trans-vaginal ultrasound usually confirms the

diagnosis. It is extremely useful for the identification of involvement of the retrocervical region and of the rectum and ovary ⁽¹²⁾. Ano-rectal ultrasound shows the nodules and can study their dimensions, the degree of infiltration of the rectal wall and the distance from the anal verge, which is important when planning resection.

Magnetic resonance (MRI) is considered a second line examination, useful to define the involvement of peritoneal and extra-peritoneal lesions. It allows a complete evaluation of the extent of the disease, essential for surgical planning. The literature reports also the use of CT virtual colonoscopy, modified by insufflation of the rectum with CO₂ and placement of a tampon in the vagina ⁽¹³⁾. This examination is not commonly used, however, because the high predictive value of the previously mentioned imaging techniques.

Tabella 1 ⁽¹⁴⁾

	Rectovaginal septum endometriosis nodule sensitivity	Rectovaginal septum endometriosis nodule specificity	Rectal wall infiltration sensitivity	Rectal wall infiltration specificity	Uterosacral ligaments involvement sensitivity	Uterosacral ligaments involvement specificity
MRI	73%	50%	53%	82%	84%	95%
AREAS Anorectal endosonography	93%	100%	100%	71%		

Ultrasound is more sensitive than MRI for the detection of rectal wall infiltration and for the diagnosis of endometriosis of the rectovaginal septum.

Therapy

Drug treatment can certainly improve symptoms but it is often not sufficient and can cause side effects ⁽¹⁵⁻¹⁷⁾. The literature supports surgery not responding to medical treatment for symptomatic disease to improve quality of life. Complete surgical ablation of the endometriosis results in the long-term reduction of symptoms and improves quality with a low recurrence rate in the DPE patients. ⁽¹⁸⁻²²⁾

Laparoscopic pelvic surgery performed by an expert surgeon is the gold standard of surgery. The extent of resection (whether nodule excision or bowel resection) is determined in each individual case. Most authors agree with a superficial resection of the nodule or a full disk resection of the rectal wall for a single nodule smaller than cm 3 in diameter, if the involvement of the bowel is less than 50% of

its circumference. When it is not possible to perform a nodule resection or in patients of Adamyam stage IV, bowel resection is indicated. Sixty to 100% of patients who have bowel resection show symptom improvement. New surgical approaches to DPE include single access surgery and robotics. When possible, the use of a single access laparoscopic approach (SILS) can be very beneficial, but there are no reports in the literature proving its effectiveness. A large experience in advanced laparoscopic surgery, (pelvic and colorectal) is mandatory for DPE. The technique has several potential advantages for the treatment of DPE particularly of the recto-vaginal septum, but confirmation in the literature is required.

There are a few reports of robotic surgery. A systematic review of three case reports and



one cohort study found this approach to be as effective as conventional laparoscopy ⁽²³⁾. More recently robotic single access surgery has being introduced and it is likely that the advantages of the mini-invasiveness of single access with the precision and ease of robotic dissection will improve the surgery for endometriosis in localizations such as the recto-vaginal septum. More studies are needed to clarify the indications and limits of these new approaches

Conclusion

Endometriosis of the recto-vaginal-septum is a "disease in a disease" for its particular diagnostic and therapeutic problems. Novel surgical approaches such as single access laparoscopy and robotics, may vary from the excision of single nodules up to extensive recto-colic resection.

Correct treatment planning is essential and the best results can be achieved by a highly motivated multi-disciplinary team.

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