

# Laparoscopic excision of rectosigmoid endometriotic plaque and cul de sac obliteration in deeply infiltrating endometriosis: a case report

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## Summary

Endometriosis represents a main cause of infertility and pelvic pain affecting 3-43 % among reproductive age women. Deep pelvic endometriosis is defined as subperitoneal infiltration of endometrial implants in the uterosacral ligaments, rectum, rectovaginal septum, vagina or bladder. The authors present a case of a 29-year-old patient who underwent laparoscopic excision of extensive endometriotic plaque in rectovaginal septum accompanied with deeply infiltrating endometriosis (DIE) and chronic pelvic pain (CPP).

**Key words:** Endometriosis; Rectovaginal septum; Laparoscopy.

## Introduction

Endometriosis is defined as the presence of ectopic endometrial glands and stroma outside the uterus. Many theories are correlated with its pathogenesis [1-3]. Although the exact prevalence is not well defined, it is estimated in about 3% to 43%. It represents the main reason of primary infertility with prevalence from 9% to 50% [4-6].

The most common endometriotic locations are the ovaries and the pelvic peritoneum, followed by deep lesions of the pelvic subperitoneal space, intestinal, and urinary system. Endometriotic lesions can be divided into superficial peritoneal endometriosis, deeply infiltrating endometriosis (DIE), and ovarian (cystic) endometriosis [7]. Endometriotic nodules or plaques in subperitoneal space behind the vagina and the cervix (DIE), are commonly associated with chronic pelvic pain (CPP) [8]. The classification of endometriosis depends on the number, the size, and location of endometrial plaques [9].

Clinical symptomatology consists of different types of pain, such as dysmenorrhea, dyspareunia, and discomfort during defecation (dyschezia) or while urinating. In these patients, laparoscopy is currently considered as the optimal surgical approach in treating DIE in terms of reduced postoperative pain and analgesic requirement and decreases the incidence of de novo adhesion formation [10].

The authors present a case of a 29-year-old patient who underwent laparoscopic excision of extensive endometriotic plaque in rectovaginal septum accompanied with DIE and CPP.

## Case Report

A 29-year-old female patient, (gravida 0, para 0), was admitted complaining of severe episodes of dysmenorrhea, dyspareunia, and pelvic pain. The symptoms had worsened during the last three months, representing abdominal pain and dyschezia. The patient received no steroidal anti-inflammatory agents aiming the pain relief.

At rectovaginal examination, a cul-de-sac nodularity and tenderness were diagnosed. The following ultrasonography confirmed the presence of a mass in the pouch of Douglas maximal diameter 30×15 mm (Figure 1). The blood count revealed Hg 13.2 g/dl, leukocytes 11,800/ml, and platelets 300,000/ml. The Ca19-9 and Ca-125 levels were in normal range.

MRI of the pelvis was performed. It revealed the presence of an extensive lesion in the cul-de-sac, bridging the dorsal cervix wall with the anterior wall of the rectosigmoid. The lesion displayed intermediate signal on T1-weighted and low signal on T2-weighted sequences. On axial images, irregular low-signal spicules were seen extending from the mass towards the surrounding fat (Figures 2a, b). Based on these findings, a preoperative diagnosis of an endometriotic plaque was made. The rectosigmoidoscopy did not reveal any potential stenosis of the rectosigmoid junction.

A laparoscopic approach was performed confirming the presence of a endometriotic plaque and cul-de-sac obliteration. The

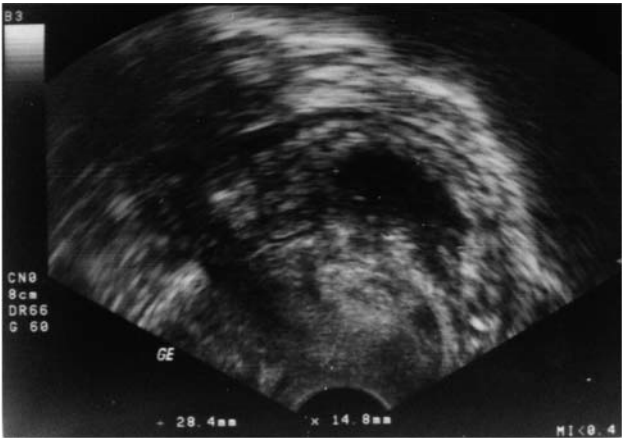


Figure 1. — Patient's transvaginal ultrasound of pouch of Douglas.

intraoperative findings consisted of normal appearance of the uterus and multiple and diffuse peritoneal adhesions. Patient underwent a peritoneal washing, adhesions lysis, and a meticulous dissection of the rectovaginal septum. Both ureters were identified and the anterior rectum was dissected down to the loose areolar tissue of the rectovaginal septum, during acute antversion of the uterus using a uterine manipulator. The deep fibrotic endometriotic plaque was dissected and removed from the posterior vagina and the anterior rectum wall (Figure 3). During dissection, an accidentally injury of the anterior rectal wall was noticed and was meticulously repaired with two interrupted 3/0 Vicryl sutures. The rectal wall integrity was confirmed via an air leak test.

The patient was staged as Grade 2; A 2, BB 1, C 0. (Enzian classification system) (Table 1). The peritoneal fluid cytology revealed no signs of malignancy. Histologic examination of the rectovaginal plaque was positive of endometriosis (Figures 4a, b). The postoperative course was uneventful and the patient was discharged on the third post-operative day. Patient received gonadotrophin-releasing hormone (GnRH) analogues for six months. At one year follow up, she is healthy and free of symptoms.

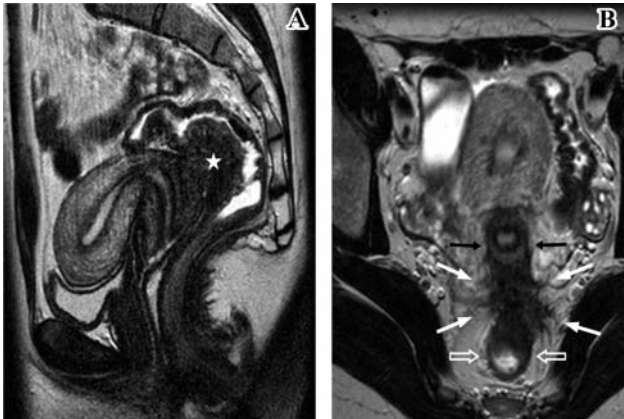


Figure 2. — MRI of the pelvis. Sagittal T2W image (A) reveals a low-signal intensity mass (asterisk) of the cul-de-sac. On the axial T2W image (B) the plaque (white arrows) is seen extending from the posterior aspect of the cervix (black arrows) to the anterior wall of the rectosigmoid (open arrows). Low-signal spicules are seen radiating from the mass towards the adjacent fat.

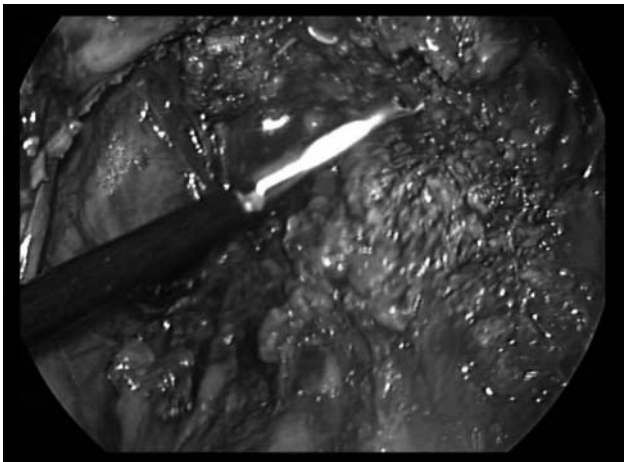


Figure 3. — Patient's laparoscopic removal of rectovaginal septum endometriosis.

Compartment	A	B/BB*	C	
	Rectovaginal septum Vagina	Sacruterine ligament Pelvic wall	Bowel	
Grade				
Grade 1				FA
< 1 cm				FB
Grade 2				FU
1–3 cm				FI
Grade 3				FO
> 3 cm				
* BB = bilateral involvement				

Table 1. — The Enzian classification system  
FA: adenomyosis; FB: bladder involvement; FU: intrinsic involvement of the ureter; FI: bowel disease cranial to the sigmoid colon; FO: other locations.

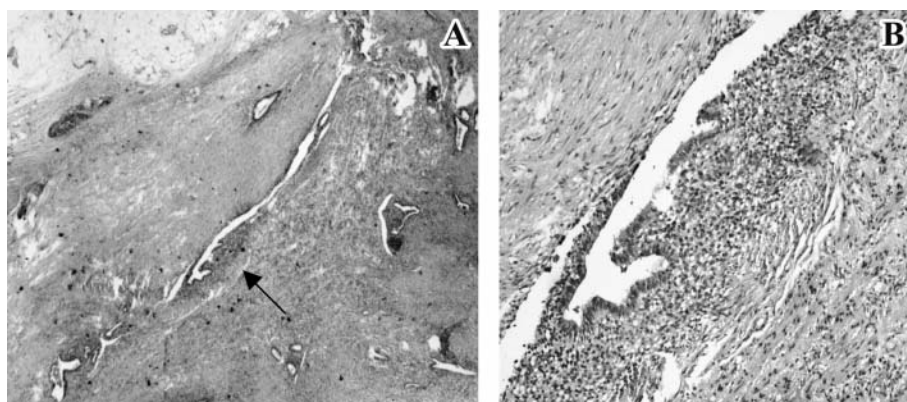


Figure 4. — (A) Histological sections of rectal-vagina septum showing a focus of endometriosis (arrow) (H-E  $\times 25$ ). (B) Endometriotic gland and stroma in fibrous stroma (H-E  $\times 200$ ).

## Discussion

Endometriosis is a gynaecological disease defined by the histological presence of endometrial glands and stroma outside the uterine cavity, most commonly implanted over visceral and peritoneal surfaces within the female pelvis, but rarely also in the pericardium, pleura and even brain [11, 12]. Deep endometriosis is defined as any lesion exceeding five mm and is most commonly found on the uterosacral cardinal ligaments, bladder peritoneum, and occasionally the pelvic sidewall and ovarian fossa [13].

Deep endometriosis and cul-de-sac obliteration implies the presence of retrocervical deep fibrotic endometriosis beneath the peritoneum. Concerning the pathogenesis of deep endometriosis it has been proposed that such lesions could originate from metaplasia of Müllerian remnants located in the rectovaginal septum, thus consisting an entity different from peritoneal endometriosis [14,15].

The histologic findings of infiltrative lesions of deep pelvic endometriosis are mainly characterized by fibromuscular hyperplasia that surrounds foci containing small cavities. The endometrial glands and stroma infiltrate the adjacent fibromuscular tissue and elicit smooth muscle, resulting in solid nodule formation [16]. This form of endometriosis has great clinical prevalence due to its association with pelvic pain symptoms [17]. In particular, endometriosis infiltrating the posterior vaginal and anterior rectal wall usually causes symptoms such as disabling dysmenorrhea, deep dyspareunia, limiting sexual activity, and severe dyschezia [18].

The optimal preoperative approach consists of imaging tests, such as transvaginal or transrectal ultrasound or MRI [19]. Transvaginal sonography is recommended for endometriomas and endometriosis of the bladder [20, 21]. Rectal endoscopic sonography with high-frequency probes has been recommended for detection of endometriosis in rectal, rectovaginal, uterosacral or rectosigmoid locations [22]. MRI of pelvis due to high accuracy is considered the diagnosis of choice. In comparison with rectal endoscopic

sonography, it excels in diagnosing extrapelvic endometriotic lesions and ureter obstruction [23].

The limitations of MRI consist of intensity signal alteration due to endometriotic fibrotic elements [24]. The physical examination can reveal infiltrated small nodules, solid deep lesions mainly located in the posterior cul-de-sac involving the uterosacral ligaments [25].

DIE nodules represent a real operative challenge due to common involvement of vital retroperitoneal structures. Careful dissection is mandatory to restore pelvic anatomy and preserve function. Laparoscopy appears to be the ideal tool to perform surgery offering the advantages of magnification, accurate hemostasis, precise dissection, and careful handling of delicate tissues.

Among pharmaceutical approaches, regarding medical therapy in patients with superficial peritoneal endometriosis, GnRH agonists, oral contraceptives, and aromatase inhibitors contribute to reduction of dysmenorrhea, dyspareunia, and chronic pelvic pain.

## Conclusion

Extensive endometriotic plaques in rectovaginal septum are accompanied with DIE and CPP. MRI is a useful modality as an adjunct to physical examination and transvaginal and transrectal sonography in evaluating patients with DIE. Surgical steps to excise DIE nodules with laparoscopy are conducted according to lesion size, location, and geometry. The outcome data regarding extensive laparoscopic dissection is continuing to confirm low morbidity and optimal survival rate.

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