# Deep Endometriosis: A Diagnostic Dilemma With Significant Surgical Consequences



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### INTRODUCTION

I magine this common scenario in gynaecology: You have consented a patient for a laparoscopic ovarian cystectomy for what appears to be an endometrioma identified on a basic transvaginal ultrasound. Upon inserting the laparoscope, you discover the posterior cul-de-sac is obliterated, with the endometrioma adherent to the pelvic sidewall and rectum (Figure 1).

The next step in the described scenario will depend on a number of factors, including the gynaecologist's level of surgical skill, the patient's informed consent, and the availability of surgical support (e.g., minimally invasive general surgeon or urologist). It is possible that in this scenario the objective of a general gynaecologic surgeon should be to perform a comprehensive diagnostic laparoscopy, obtain images of the pelvis and pathology, and subsequently refer the patient to an endometriosis surgeon. Regardless of the surgeon, however, the lack of preoperative data may lead to incomplete surgical resection of disease, a lengthy unplanned operation, and may risk harm to the involved organs.

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Care for those with deep endometriosis requires diagnostic and surgical expertise for optimal outcomes. Surgery for DE is not dissimilar to ovarian cancer, where outcomes are superior for patients who are optimally debulked and treated by teams led by gynaecologic oncologists. Patients with DE should ideally be managed by teams led by minimally invasive gynaecologic surgeons with specialized knowledge and training in endometriosis. The difficulty is that disease severity and extent has been traditionally difficult to locate and map preoperatively, creating challenges in matching a patient with the right care team to help facilitate the "ideal" treatment plan.

This commentary highlights current gaps in the diagnosis of DE and proposes new concepts to enhance the care of patients with endometriosis.

#### THE PROBLEM

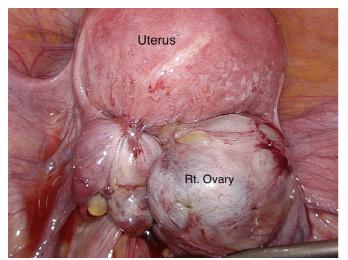
Endometriosis is a common and complex inflammatory condition among women of reproductive age, with a generally accepted prevalence of 10% to 15%. The disease itself encompasses three distinct subtypes: superficial endometriosis (Figure 2), ovarian endometriomas (Figure 1), and DE (Figure 3). The contemporary definition of DE is endometrial glands and stroma in fibromuscular tissue

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Figure 1. Enlarged and immobile right ovary, containing endometrioma, and completely obliterated cul-de-sac.



Legend: Rt, right

(adenomyosis externa), which does not necessarily require a specific depth of measurement. 4,5 The bowel is the most commonly affected nonreproductive organ, with approximately 5% to 10% of patients affected. The prevalence of bowel DE in patients referred to tertiary care centres is significantly higher, estimated between 20% and 25%. 8,9 In the presence of bowel DE, the cul-de-sac is most likely obliterated. Similarly, when cul-de-sac obliteration is diagnosed, bowel DE is three times more likely to be present.<sup>7,10</sup> The anterior rectum, rectosigmoid junction, and sigmoid colon are the most likely sites of bowel involvement. 11 Unfortunately, this most advanced and morbid subtype of endometriosis has significant negative health impacts on patients, including common issues such as chronic pelvic pain and infertility, but also rare problems such as bowel obstruction and hydronephrosis.

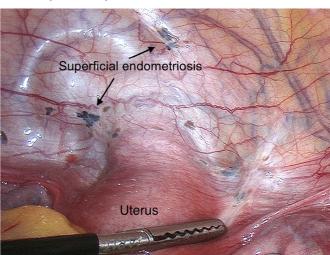
## LIMITATIONS OF CURRENT DIAGNOSIS AND MANAGEMENT

The current gold standard method to diagnose pelvic endometriosis is laparoscopy with histopathology. <sup>12,13</sup> However, this approach has limitations, <sup>2</sup> which has led to a surge in interest in developing non-invasive diagnostic methods. <sup>14</sup> With new investigative tools possible, gynaecologists should be questioning whether the rare, though real, surgical risks of

#### **ABBREVIATIONS**

DE deep endometriosis
ETVS expert-guided TVS
TVS transvaginal ultrasound

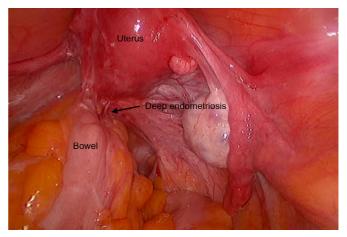
Figure 2. Superficial endometriosis deposits along anterior compartment peritoneum.



a diagnostic laparoscopy are warranted.<sup>15</sup> In addition, not all endometriosis is visible laparoscopically. For example, the rectovaginal septum or the lower (retroperitoneal) anterior rectum are not seen laparoscopically; as such, disease in these locations may be unrecognized. Lastly, laparoscopy may fail to uncover sites and/or the depth of disease, leading to incomplete excision during surgery.

For those who require surgical management, the lack of a thorough preoperative understanding of disease presence and severity may further limit gynaecologists who plan laparoscopic resection of endometriosis procedures. When a gynaecologist encounters unexpected DE or disease severity greater than anticipated, certain issues arise: (1) the surgeon's skill does not match the skill level required to adequately and safely address the severity of disease, (2) the surgeon's skill level is appropriate but the patient was not

Figure 3. Partially obliterated cul-de-sac with tethering of bowel adhered to posterior uterus/left uterosacral ligament at site of deep endometriosis lesion of the bowel.



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