

DOI: <https://dx.doi.org/10.18203/2320-1770.ijrcog20252362>

Case Report

Lesson revisited: laparoscopic prowess in bowel endometriosis-a case report on management of endometriosis involving the sigmoid colon and appendix

Dipak Limbachiya¹, Amrita Datta^{2*}, Manoj Agarwal³, Saurabh Chandrakar⁴

¹Department of Obstetrics and Gynaecology, Eva Women's Hospital, Ahmedabad, Gujarat, India

²Department of Obstetrics and Gynaecology, All India Institute of Medical Sciences, Guwahati, Assam, India

³Department of Gastrointestinal Surgery, Austamangal Hospital, Ahmedabad, Gujarat, India

⁴Department of Critical Care Medicine, Apollo Excelcare Hospitals, Guwahati, Assam, India

Received: 04 June 2025

Accepted: 05 July 2025

*Correspondence:

Dr. Amrita Datta,

E-mail: amritadatta@aiimsguwahati.ac.in

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Endometriosis is a chronic inflammatory disorder affecting 10-12% of reproductive-age women. Although it primarily involves pelvic organs, bowel endometriosis accounts for approximately 10% of cases, predominantly affecting the rectosigmoid region. Symptoms may be nonspecific, and imaging findings can be misleading, often delaying diagnosis. Surgical intervention remains both diagnostic and therapeutic, with laparoscopy now favored for its precision and reduced morbidity. We present a case of a 26-year-old woman with acute lower abdominal pain radiating to the right shoulder, alongside a six-month history of dyschezia, dyspareunia, and vaginal dryness. Imaging suggested a left-sided endometriotic ovarian cyst adherent to the uterus with suspicion of sigmoid involvement. Laparoscopic exploration revealed endometriotic lesions involving the sigmoid colon, appendix, and left ovary. Surgical management included bilateral ureterolysis, left ovarian cystectomy, segmental sigmoid colectomy with nerve-sparing side-to-side anastomosis, and appendectomy. Specimens were retrieved via colpotomy. The patient had an uneventful recovery and reported significant symptom improvement at follow-up. This case highlights the complex presentation of bowel endometriosis and the pivotal role of laparoscopy in diagnosis and management. Segmental colectomy with nerve-sparing techniques ensures complete resection while preserving autonomic function and optimizing outcomes. Appendectomy is advisable when appendiceal involvement is suspected. Vaginal specimen retrieval may further reduce postoperative morbidity. Multidisciplinary collaboration and patient-specific surgical planning are essential in managing extensive bowel endometriosis.

Keywords: Laparoscopy, Bowel endometriosis, Sigmoid resection, Reproductive age

INTRODUCTION

Endometriosis is a chronic gynecological condition characterized by the presence of normal endometrial tissue outside the uterine cavity. It affects about 10-12% of women of reproductive age.¹ While it most commonly involves pelvic organs, it can also be found in extra-pelvic locations such as the intestines, bladder, abdominal wall, and thoracic cavity.^{2,3}

Endometriosis of the bowel accounts for 10% of cases, primarily affecting the rectum and sigmoid in about 90%. It usually appears as a single nodule larger than 1 cm in diameter, often infiltrating the bowel's muscular layer and surrounding tissues.¹ The pathogenesis of bowel endometriosis is influenced by multiple factors. The rectum and sigmoid colon are particularly susceptible to the disease because refluxed endometrium tends to settle in the pouch of Douglas, where its movement is restricted by the sigmoid colon.⁴

Symptoms of bowel endometriosis can be non-specific, including dysmenorrhea and dyspareunia. More specific bowel-related symptoms, such as diarrhoea, constipation, dyschezia, and, rarely, bowel obstruction, depend on the disease's location as also the lesion size. Both clinical symptoms and imaging can be deceptive in diagnosing bowel endometriosis. Any cyclical pelvic symptoms should raise the suspicion.^{1,5} Studies have shown surgical intervention to be both diagnostic and therapeutic in young females.⁵ Excision of endometriotic deposits has been found to be the most effective treatment in such cases and with the advancement of techniques, laparoscopic surgeries have emerged as the most preferred modality.⁶ As the incidence of endometriosis is increasing worldwide, all levels of health care providers including the primary care physicians might be made aware of the varied symptomatology and therapeutic modalities specially minimally invasive ones.⁷

Here, we present a case of endometriosis presenting with symptoms mimicking acute abdomen but found to have endometriosis in the final picture which was managed laparoscopically.

CASE REPORT

We report a case of Mrs. X, 26 years old presenting with complaints of acute lower abdominal pain radiating to right shoulder. On further probing, she revealed having complaints of painful defecation since 6 months. She also complained of dyspareunia and vaginal dryness which had progressively increased since last 4 months. She had no other medical or surgical history. There were no menstrual irregularities except occasional dysmenorrhea.

On evaluation, imaging revealed features of a left sided endometriotic cyst of 32×17×8 mm which was adhered to the posterior surface of uterus (Figure 1). The anterior surface of underlying rectosigmoid colon was also found to be adherent to uterus with suspicion of a colorectal nodule (Figure 2). She was planned for surgical management and a multidisciplinary team, comprising a gynecologist specialised in laparoscopic procedures and a gastrointestinal surgeon planned the surgical intervention.

Initial exploration confirmed the presence of dense adhesions between uterus and left ovary. Endometriotic nodules were present over the sigmoid colon and appendix apart from the left endometriotic cyst. Adhesions were carefully lysed using harmonic energy devices applying sharp and blunt dissection techniques. After bilateral ureterolysis, both sided inferior epigastric nerves were identified and separated from the endometriotic lesions. The diseased peritoneum adherent to the tubo ovarian mass was resected radically using energy sources. Left ovarian cystectomy was done.

Since there were multiple nodules found to be involving part of sigmoid colon, it was decided to proceed with a limited sigmoid colectomy. (Figure 3). A side-to-side

anastomosis was performed with a linear stapler (60 mm) after resection of the part of sigmoid colon. Anastomosis was checked for integrity. Appendectomy was also done as there seemed to be a surface endometriotic deposit. Specimens were retrieved through a colpotomy incision. Surgical duration was of 100 minutes and blood loss was approximately 50 ml.

Her postoperative course was uneventful. She was monitored for bowel function and signs of infection. ERAS (enhanced recovery after surgery) protocol was integrated in her post operative management. Albumin infusion was administered in 2nd and 3rd postoperative days. Oral intake was gradually resumed, and she was discharged on the fifth postoperative day after passage of stools. At 6 weeks and 3 months follow-up post-surgery, she reported significant improvement in her symptoms, including resolution of painful defecation and vaginal dryness. She continues to be monitored for recurrence at the time of publication of this report.

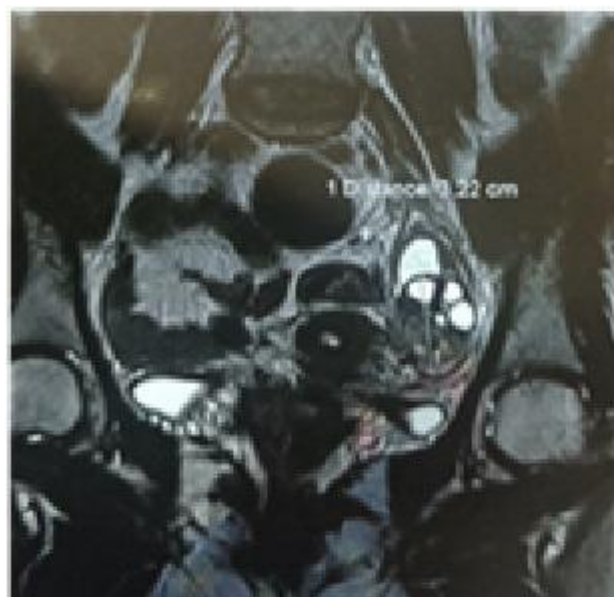


Figure 1: Left sided endometriotic cyst of 32×17×8 mm adhered to the posterior surface of uterus.



Figure 2: Suspected Colorectal nodule secondary to endometriosis adherent to uterus.



Figure 3: Limited sigmoid colectomy specimen after resection.

DISCUSSION

Bowel endometriosis is both diagnostic and therapeutic conundrum for the physician. The diagnosis can be challenging due to the non-specific nature of clinical symptoms and imaging features.⁸ Hence, a high degree of suspicion is warranted in such cases. Dynamic contrast enhanced MRI has proved to be useful as an imaging modality.⁸ It is important to consider endometriosis as a differential in young female patients with chronic abdominal symptoms as stated.⁵

Literature has found laparoscopy to be about 97% sensitive in detecting endometriotic lesions.⁸ Reports have also shown that laparoscopic surgery including colectomy was effective in reducing abdominal symptoms in endometriosis.⁹ Surgery is to be considered as a treatment modality in patients of endometriosis presenting with gastrointestinal symptoms.¹⁰ Segmental colorectal resections have emerged as feasible options for management of bowel endometriosis.¹¹ Such resections are safe in expert hands and have decreased incidence of post operative pain and surgical stress response as also a faster return to normal bowel function. Complete surgical resection is also necessary to have a better outcome.^{12,13} A higher spontaneous pregnancy rate is reported following laparoscopic procedures.¹⁴

Segmental bowel resection has been recommended as the treatment of choice in extensive, multifocal diseases where conservative approaches are not feasible.^{11,15} Our patient also underwent segmental resection of sigmoid colon. A trial comparing full thickness discoid colon resection with segmental resection has failed to demonstrate any advantage in the full thickness resection group though a higher risk of anastomotic leak was recorded in the segmental resection group.¹⁶

Some studies have mentioned that the limited resection of a bowel segment with preservation of adjacent autonomic pelvic nerve plexus can add to optimized wound healing with decreased rates of severe complication rates such as anastomotic leakage and fistula formation. In addition, preservation of the rectal artery supply by sparing the mesenteric inferior and rectal arteries, suggested an association between the perfusion of the anastomosis and better healing.¹¹ Hence nerve sparing techniques variants are preferred to be used in conjunction with segmental resection.¹⁷ In keeping with the recommendations, we also performed a nerve sparing resection in our patient. Our patient also underwent an appendicectomy. In case of endometriotic appendicular deposits, studies have advocated appendectomy intraoperatively.¹⁸ The reasons have been multiple including decreased incidence of chronic pelvic pain and the elimination of appendicitis in patients with endometriosis.¹⁹ Appendicular endometriosis though rare can present as acute abdomen in the reproductive age group.¹⁹

As understood, endometriosis can present with various symptoms which might often lead to delay in diagnosis. As primary care physicians are often the ones whom such women present to, they need to be aware of the management options and multidisciplinary treatment modalities of endometriosis.²⁰

In our case, specimens were retrieved vaginally. Reports have shown that extraction of specimens through colpotomy instead of a port site retrieval offers a comparative advantage of reducing the overall wound size as also post operative pain which was similar to our case.¹⁰ Although our patient did not present with infertility as such, laparoscopic segmental bowel resections have been found to be effective in improving outcomes in these cases also.²¹ Laparoscopic surgeries result in lesser post operative adhesion formation which in turn has lesser impact on fallopian tubes and ovaries thus improving the fertility potential.²² But even though these are minimally invasive, such surgeries need a skilled operator.²² Radical resections with a patient tailored approach are the mandate in bowel endometriosis.

CONCLUSION

This case underscores the importance of comprehensive surgical planning with a multidisciplinary approach and execution in the treatment of bowel endometriosis. Meticulous laparoscopic management including segmental bowel resection and appendectomy can provide effective symptom relief and improve the quality of life for patients with bowel endometriosis. Laparoscopic surgery is minimally invasive but requires a skilled operator and advanced techniques. Adequate informed consent before surgery is essential.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

- Habib N, Centini G, Lazzeri L, Amoroso N, El Khoury L, Zupi E, et al. Bowel Endometriosis: Current Perspectives on Diagnosis and Treatment. *Int J Womens Health.* 2020;12:35-47.
- Chapron C, Fauconnier A, Vieira M, Barakat H, Dousset B, Pansini V, et al. Anatomical distribution of deeply infiltrating endometriosis: surgical implications and proposition for a classification. *Human Reproduct.* 2003;18(1):157-61.
- Galazis N, Arul D, Wilson J, Pisal N. Bowel endometriosis. *BMJ Case Rep.* 2014;2014:bcr2013202140.
- Yong PJ, Bedaiwy MA, Alotaibi F, Anglesio MA. Pathogenesis of bowel endometriosis. *Best Pract Res Clin Obstet Gynaecol.* 2021;71:2-13.
- Dhannoon A, Bajwa A, Kunna M, Canney A, Nugent E. Beyond borders: A case report of small bowel obstruction secondary to undiagnosed florid endometriosis. *Int J Surg Case Rep.* 2022;93:106994.
- Nezhat C, Hajhosseini B, King LP. Laparoscopic management of bowel endometriosis: predictors of severe disease and recurrence. *JSLs.* 2011;15(4):431-8.
- Hare L, Roberts V, Hare NP, Mughal F. Assessment and management of endometriosis in young people in primary care. *Br J Gen Pract.* 2023;73(737):572-3.
- Nasim H, Sikafi D, Nasr A. Sigmoid endometriosis and a diagnostic dilemma-A case report and literature review. *Int J Surg Case Rep.* 2011;7:181-4.
- Rocha AM, Albuquerque MM, Schmidt EM, Freitas CD, Farias JP, Bedin F. Late impact of the laparoscopic treatment of deep infiltrating endometriosis with segmental colorectal resection. *Arq Bras Cir Dig.* 2018;31(4):e1406.
- Ghezzi F, Cromi A, Ciravolo G, Rampinelli F, Braga M, Boni L. A new laparoscopic-transvaginal technique for rectosigmoid resection in patients with endometriosis. *Fertil Steril.* 2008;90(5):1964-8.
- Darici E, Salama M, Bokor A, Oral E, Dauser B, Hudelist G. Different segmental resection techniques and postoperative complications in patients with colorectal endometriosis: A systematic review. *Acta Obstet Gynecol Scand.* 2022;101(7):705-718.
- Abrão MS, Petraglia F, Falcone T, Keckstein J, Osuga Y, Chapron C. Deep endometriosis infiltrating the recto-sigmoid: critical factors to consider before management. *Hum Reprod Update.* 2015;21(3):329-39.
- De Cicco C, Corona R, Schonman R, Mailova K, Ussia A, Koninckx P. Bowel resection for deep endometriosis: a systematic review. *BJOG.* 2011;118(3):285-91.
- Daraï E, Lesieur B, Dubernard G, Rouzier R, Bazot M, Ballester M. Fertility after colorectal resection for endometriosis: results of a prospective study comparing laparoscopy with open surgery. *Fertil Steril.* 2011;95(6):1903-8.
- Nezhat C, Li A, Falik R, Daniel C, Gity R, Alexandra S, et al. Bowel endometriosis: diagnosis and management. *Am J Obstet Gynecol.* 2018;218:549-562.
- Roman H, Bubenheim M, Huet E, Bridoux V, Zacharopoulou C, Daraï E, et al. Conservative surgery vs colorectal resection in deep endometriosis infiltrating the rectum: a randomized trial. *Hum Reprod.* 2018;33(1):47-57.
- Landi S, Ceccaroni M, Perutelli A, Allodi C, Barbieri F, Fiaccavento A, et al. Laparoscopic nerve-sparing complete excision of deep endometriosis: is it feasible? *Hum Reprod.* 2006;21(3):774-81.
- Allahqoli L, Mazidimoradi A, Momenimovahed Z, Günther V, Ackermann J, Salehiniya H, et al. Appendiceal Endometriosis: A Comprehensive Review of the Literature. *Diagnostics.* 2023;13(11):1827.
- Al Oulaqi NS, Hefny AF, Joshi S, Salim K, Abu-Zidan FM. Endometriosis of the appendix. *Afr Health Sci.* 2008;8(3):196-8.
- Dixon S, McNiven A, Talbot A, Hinton L. Navigating possible endometriosis in primary care: a qualitative study of GP perspectives. *Br J Gen Pract.* 2021;71(710):e668-76.
- Raos M, Mathiasen M, Seyer-Hansen M. Impact of surgery on fertility among patients with deep infiltrating endometriosis. *Eur J Obstet Gynecol Reprod Biol.* 2023;280:174-8.
- Nagakari K, Azuma D, Takehara K, Ohuchi M, Ishizaki Y, Sakamoto K. Laparoscopic Triple Segmental Bowel Resection for Endometriosis Revealed by Rectal Obstruction during Infertility Treatment. *Case Rep Gastroenterol.* 2022;16(1):29-36.

Cite this article as: Limbachiya D, Datta A, Agarwal M, Chandrakar S. Lesson revisited: laparoscopic prowess in bowel endometriosis-a case report on management of endometriosis involving the sigmoid colon and appendix. *Int J Reprod Contracept Obstet Gynecol* 2025;14:2784-7.