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A Case of Extensive Pelvic Endometriosis and Associated Sigmoid Polyp: A Case Report

Sayedatus Saba[1*], Sadia Refat[2], Mohammed Kamal[3] and Mustain Billah[4]

[1]Department of Clinical Pathologist, Dhaka Medical College Hospital, Dhaka, Bangladesh
[2]Department of Pathology, Dhaka Medical College, Dhaka, Bangladesh
[3]Department of Pathology, Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh
[4]Department of Cardiac Surgery, Bangabandhu Sheikh Mujib medical University, Dhaka, Bangladesh

[*]**Corresponding author:** Sayedatus Saba, Department of Clinical Pathologist, Dhaka Medical College Hospital, Dhaka, Bangladesh, E-mail: sayedatussaba1616@gmail.com

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Abstract

Gastrointestinal system is the commonest site of extragenital endometriosis. Its clinical manifestations are nonspecific and lacks etiological manifestations. Differentiation of colorectal endometriosis from malignancy is often difficult and leads to misdiagnosis. We report a case of extensive pelvic endometriosis involving uterus, ovaries and sigmoid colon, presented as colonic polyp. A 39-year-old woman was referred to Central hospital, Dhaka with abnormal uterine bleeding, left lower abdominal pain, chronic constipation and per rectal bleeding. Colonoscopy showed a polypoid lesion in sigmoid colon. Biopsy was taken from the lesion. The Magnetic Resonance Imaging (MRI) of pelvis was reported as diffuse uterine adenomyosis, bilateral ovarian endometriotic cysts, extensive adhesion with omentum and bowel loops, circumferential sigmoid colonic growth forming an amalgamated pelvic mass (4 × 1.4 cm) and moderate luminal narrowing. Laparoscopic high anterior resection with ileostomy with Total Abdominal Hysterectomy (TAH) and Bilateral Salpingo-Oophorectomy (BLSO) was performed. Endometriosis was diagnosed histopathologically in both specimens of the sigmoid polypoid mass. Periodic Acid-Schiff (PAS) stain was negative in endometrial glandular cells. Immunohistochemistry (CK7, CK20, vimentin, ER) were also performed. CK7, vimentin and ER antibodies were positive, whereas CK20 antibody was negative in endometrial gland and stroma, which further confirmed the diagnosis. This case merits attention because a preoperative diagnosis of colorectal endometriosis is often misleading. The histopathological, clinical, sonographic or radiological findings can easily mimic the features of malignancy. It also highlights the importance of maintaining a broad differential diagnosis and utilizing a multidisciplinary team in the management of a colorectal mass in women of reproductive age groups.

Keywords: Endometriosis; Immunohistochemistry; Laparoscopy; TAH; BLSO

Introduction

Endometriosis is the presence of functional endometrial glands and stroma outside the uterine cavity, including the skin, lungs, gastrointestinal tract, urinary system and central nervous system. It is estrogen-dependent. Its exact pathogenesis is still unknown, but environmental, epigenetic, immune and congenital factors all presumably have a role [1,2]. Approximately 3%-15% of women of reproductive age have varying degrees of endometriosis, affecting approximately 190 million women worldwide [1,2]. The majority of them are located in the genital organs, the most abnormal sites being the ovaries, uterosacral ligament, greater ligament, pelvic peritoneum and abdominal scars. Common symptoms of endometriosis include dysmenorrhea, menorrhagia, chronic pelvic pain, dyspareunia and infertility. The most common site of extra-genital endometriosis is the gastrointestinal tract, accounting for 3.8%-37% [3]. There are 3 main theories for the mechanism of extragenital endometriosis. The first is that endometrial fragments travel retrograde through the fallopian tubes during menstruation and implant on peritoneal structures [1]. The second theory is that the peritoneum, which a derivative of the coelomic epithelium, differentiates into endometriosis in the peritoneal cavity through a metaplastic process [1]. The last suggests that the

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endometrial tissue spreads to the pelvis *via* hematogenous ad lymphatic channels. In intestinal endometriosis, aberrant endometrial tissue adheres to the peritoneum and bowel wall under the influence of ovarian hormones. As a result of cyclic bleeding, sloughing and proliferation, inflammation and fibrosis occur around the lesion, which can progress and surround the bowel. It may also grow into the lumen, leading to obstruction [4]. But lesions involving the mucosal layer are relatively rare. Its prevalence is as high as 1% in women of childbearing age [5]. Rectal endometriosis, first reported by Dr. Sampson in 1922 [6] can cause lower gastrointestinal symptoms such as diarrhea, per rectal bleeding and periodic abdominal pain, which can seriously affect the quality of life of women of childbearing age. Also due to its infiltrative nature and tendency to produce obstructions due to stricture formation, the clinical presentation of intestinal endometriosis is often misdiagnosed as malignancy, especially during surgery. Its gross and radiological appearance may also be indistinguishable from malignancy, which may lead to misdiagnosis. We report a case of extensive pelvic endometriosis involving uterus, ovaries, sigmoid colon and rectum, presented as colorectal polypi.

Case Report

A 39-year-old Gravida 1 Para 1 (G1P1) woman was referred to Central hospital limited, Dhaka with a 6-month history of constipation, decreased appetite, iron deficiency anemia and a 15 kg unintentional weight loss. She also reported a long history of dysmenorrhea, left lower abdominal pain, chronic constipation and per rectal bleeding during her menstrual cycles. Colonoscopy was performed on 22 February 2024, which showed a large polypoid lesion in sigmoid colon, 20 cm from the anal verge **(Figure 1)**.

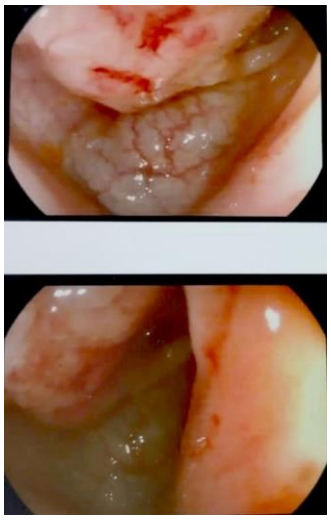

Figure 1: Colonoscopic image of sigmoid polyp (endometriosis).

Biopsy was taken from the lesion. Biopsy report was concluded a colonic endometriosis. The patient was still experiencing menstrual bleeding lasting up to 2 weeks, pelvic pain and per rectal bleeding specially around the time of her menstrual cycles. A T2-weighted Magnetic Resonance Imaging (MRI) of her pelvis with and without contrast was obtained secondary to concern for malignancy on 07 March 2024 and was reported as diffuse uterine adenomyosis, bilateral ovarian endometriotic cysts, extensive surrounding adhesion with omentum and bowel loops, circumferential sigmoid colonic growth (4 × 1.4 cm) forming an amalgamated pelvic mass with moderate luminal narrowing with trace free fluid. Given the previous benign pathology report, the provisional diagnosis was speculated as intestinal endometriosis, but concern for malignancy still remained. She had no desire for future fertility as her husband passed away 1 year back and wanted to discuss a hysterectomy. Her gynecologist agreed that a hysterectomy was indicated and referred her to a gynecologic oncologist and a general surgeon due to the complexity of the surgery. A laparoscopic high anterior resection with covering ileostomy with TAH & BLSO was planned by the panel of doctors and was performed on 12 March 2024 accordingly. All of the specimen were sent to the laboratory for histopathological examination.

Materials and Methods

Representative specimens were fixed with 10% neutral buffered formalin for further processing **(Figures 2 and 3)**. Periodic Acid Schiff (PAS) special staining was done and Immunohistochemistry (CK7, CK20, Vimentin, ER) were also performed.

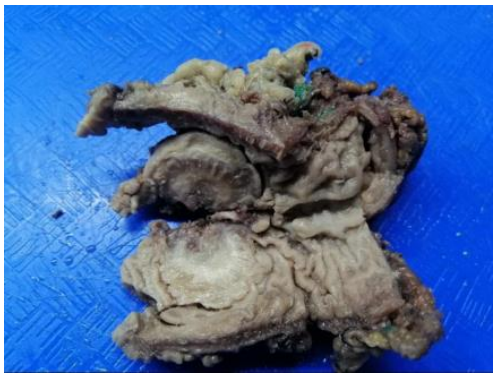

Figure 2: Gross examination of part of sigmoid colon and upper rectum showing a polypoid lesion on the sigmoid colon.

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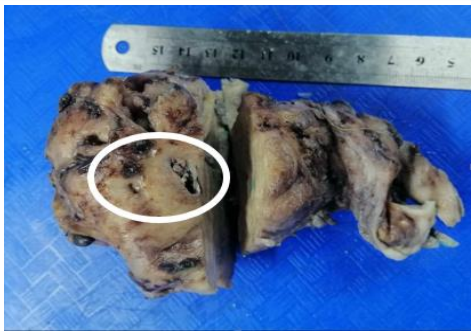

Figure 3: Gross examination of resected uterus showing involvement of parametrium by endometriosis.

Results

In the histopathological examination, H&E sections of colonic tissue revealed unremarkable mucosa. The colonic wall contained multiple foci of endometrial gland with stroma. Some of these glands contained old blood clot **(Figure 4)**.

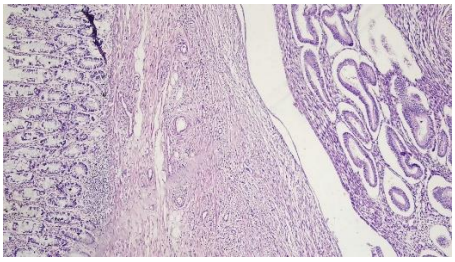

Figure 4: Microscopic image of colonic endometriosis (40X).

The PAS stain was negative for any intracytoplasmic or extracellular mucin **(Figure 5)**. The wall also showed fibrosis. Sections of uterus revealed multiple foci of adenomyosis in the uterine wall. The parametrium also contained foci of endometriosis. Both ovaries showed foci of endometriosis **(Figure 6)**. The diagnosis was:

- Resected sigmoid colon and rectum: Endometriosis in the sigmoid colon
- Uterus: Adenomyosis with chronic cervicitis
- Ovary (both): Endometriosis.

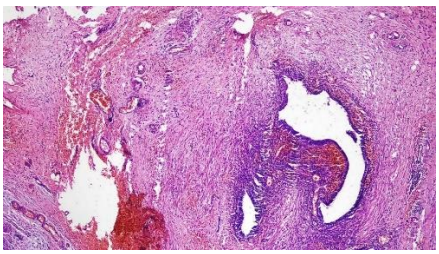

Figure 5: PAS stain was negative in the endometrial glands (40X).

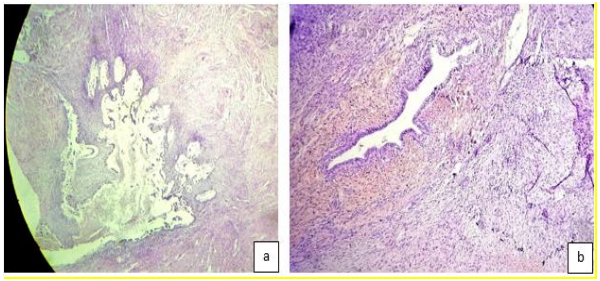

Figure 6: (a) H&E staining of uterine wall showing adenomyosis (20X); (b) Ovary showing foci of endometriosis (40X).

Immunohistochemistry report was CK7 (+ve), Vimentin (+ve), ER (+ve) and CK20 (-ve) **(Figures 7-10)**.

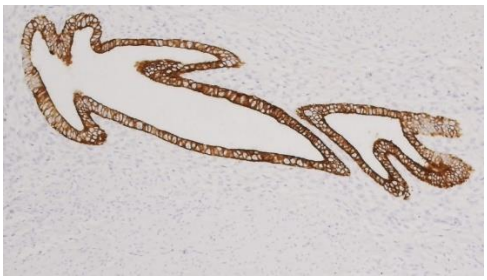

Figure 7: Positive immunohistochemical staining of CK7 antibody in endometrial glandular epithelium (40X).

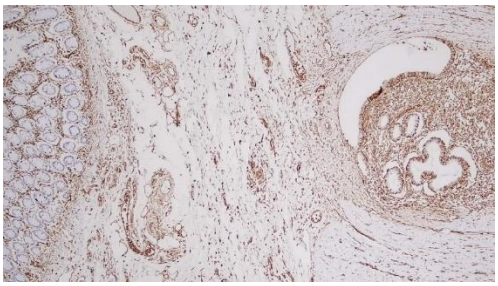

Figure 8: Positive immunohistochemical staining of Vimentin antibody in both endometrial gland and stroma (20X).

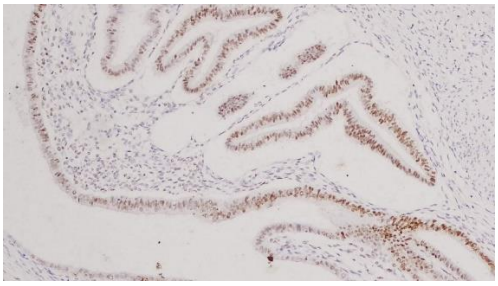

Figure 9: Positive immunohistochemical staining of ER antibody in endometrial glandular epithelium (40X).

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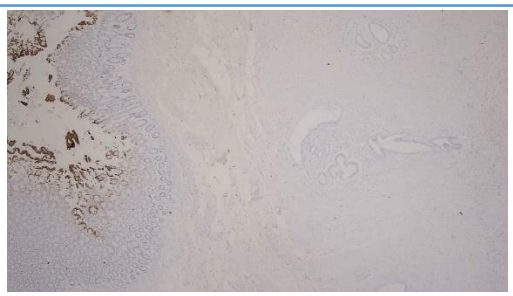

Figure 10: Negative immunohistochemical staining of CK20 antibody in colonic endometriosis, which differentiates it from colonic adenocar-cinoma (20X).

Discussion

0.1%-0.7% of all patients with endometriosis present with an intestinal obstruction [3]. Majority of the patients with gastrointestinal endometriosis may experience nonspecific symptoms such as cyclic abdominal pain, nausea, vomiting, diarrhea and/or constipation [3]. Interestingly, some patients are asymptomatic. This makes it difficult to identify endometriosis as a cause.

Our patient had chronic pain from her endometriosis for years, but only recently began experiencing significant changes in her bowel movements, but she did not have features of complete obstruction. Endometriosis can prove difficult to distinguish from malignant disease, being colorectal cancer is a much more common etiology [3]. An endometriotic colorectal mass can appear comparable to a neoplasm on imaging and can be responsible for similar symptomatology. Both of the diseases may be manifested as an annular lesion or as an intraluminal polypoid mass [7]. In our case, the lesion found in sigmoid colon was of polypoid type. Even though our patient was known to have an established diagnosis of endometriosis, repeat benign biopsies from the mass were not enough to preoperatively convince the medical team that the mass did not have a malignant component. Without previous history of endometriosis, histopathological diagnosis of colorectal endometriosis is nearly impossible as it can very much mimic a well differentiated adenocarcinoma. The only two clues to differentiate them are: In endometriosis mucosa is usually normal and cilia may help distinguish endometrial glands from colonic glands. This case highlights the importance of maintaining a broad differential when assessing women of reproductive age found to have a mass in their colon or rectum. The symptoms of intestinal endometriosis can be associated with the patient's menstrual cycle in 18%-40% of cases [8], which in our case helped to predict the diagnosis. Although endometriosis is benign, surgical resection of the colonic mass is still vital. Colonic endometriosis can progress to complete obstruction, toxic megacolon or perforation [3,9]. Moreover, endometrial adenocar- cinoma can arise from colonic endometriosis [10]. A systematic review of randomized controlled trials and observational studies on the surgical techniques for treatment of colorectal endometriosis by Popoutchi M J, Averbach P, Filho C, Averbach M found that the support of a multidisciplinary team was a crucial part of success [11]. Studies have reported that immunohistochemistry (CK7, ER, CK20 and CD × 2) can help improve the diagnosis in cases of diagnostic difficulties [12]. It was of great benefit that, the gynecologic oncology and general surgery teams coordinated and worked together at the hospital where our patient sought her treatment. She was evaluated for her suspicious rectal mass while pursuing a radical hysterectomy for her endometriosis. This saved the patient from having to undergo 2 separate procedures for treatment and all the associated risks. We would highly encourage a multimodal approach in future complex endometriosis cases.

Conclusion

Endometriosis presenting with colorectal symptoms is rare, but has a greater prevalence in women of reproductive age group. However, this case highlights that the presentation of endometriosis is variable and can be hard to recognize. Physicians should maintain a broad differential diagnosis when evaluating a colorectal mass in reproductive-age women. Pathologist should be careful during histopathological examination of the specimen and Immunohistochemistry is helpful in this part for making a confirmed diagnosis. Physicians should also make an endeavor to utilize a multidisciplinary team in the treatment and management of complex endometriosis cases whenever possible.

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Declaration of Conflicting Interests

There are no conflicting interests.

Research Ethics and Patient Consent

Informed written consent was taken from the patient.

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