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CASE REPORT

Colonic Endometriosis: A Case Report and Literature Review.

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Abstract

Endometriosis is characterized by the presence of normal endometrial mucosa that is implanted in sites other than the uterine cavity. It is commonly presented in women in reproductive age, seldom involving intestinal tract. We reported a case of colonic endometriosis presented with bleeding per rectum, coinciding with her cyclical bleeding. Colonoscopy showed surface mucosal inflammation at the recto-sigmoid junction mimicking inflammatory bowel disease. Biopsy from the colonoscopy revealed the presence of endometrial tissue within colonic mucosa and submucosa. Colonic endometriosis should always be kept in mind as a differential diagnosis in women in reproductive-age, presenting with symptoms of gastrointestinal bleeding and abdominal pain during the menstrual period. A thorough literature review was conducted with emphasis on further diagnostic applications, complications and management.

Keywords: endometriosis, recto-sigmoid, inflammation.

Introduction

Endometriosis is characterised by the presence of normal endometrial mucosa that is implanted in sites other than the uterine cavity. Depending on the sites detected, it is classified as endo-pelvic endometriosis (PE) and extra-PE [1-4]. The endo-PE is the endometrial tissue located in the minor pelvis, the uterosacral ligaments, the fallopian tubes and the ovaries, whereas, the less common extra-PE are implantation on the abdominal wall, scars of the perineum, the umbilicus, inguinal canal, central nervous system, the renal and gastrointestinal tract, the thorax and the nasal mucosa [5-7]. Endometriosis is the most common cause of chronic pelvic pain, in which 40-60% are among women with dysmenorrhea and 15-25% with infertility problems. It is extremely rare after menopause, due to its oestrogen dependency [8-10]. It affects women of reproductive age women globally regardless of race, ethnicity, maternal or social status [11, 12]. One of the extra-PE involves gastrointestinal tract (GI) and the sigmoid colon is the most common site, followed by the rectum, ileum, caecum and appendix. Clinically, patients tend to present with severe pain during menstrual periods and during sexual intercourse. It also presents with abdominal bloating, nausea, fatigue, abnormal bowel function, rectal bleeding, difficulty in urination, sometimes even with depression, anxiety, and infertility [12,13]. There can be a relapse of endometriosis during menopause that has been correlated with hormonal replacement therapy [14]. A higher prevalence of endometriosis was observed in certain disease conditions such as hypothyroidism, fibromyalgia, chronic fatigue syndrome, autoimmune diseases, allergy and asthma [15]. Although oestrogen plays a major role as an aetiology of endometriosis, the pathogenesis is likely to be multi-factorial such as genetics and environmental factors. An immunological aetiology related to alteration in peritoneal factors is also highlighted as a predisposing condition leading to endometriosis [16 – 19].

Case Report

A 37-year-old married woman with two grown up children, was seen in the outpatient unit of gastroenterology. She complained of passing blood and mucous stool together with pain in the left iliac fossa. She noticed that the bleeding tends to coincide with her menstrual period since a year ago. She had IUCD inserted in year 2015. It was recently replaced with a second IUCD in March 2020. On physical examination, patient was in normal height and weight with a BMI calculated as 20.24. Patient was afebrile, with pulse rate and blood pressure within normal range. She had normal respiratory rate and her SpO2 was 100%. Based on her presentation the attending doctor (KSA) had suspected an extra-PE. Hence, further investigations on computed tomographic (CT) scanning as well as colonic endoscopy and biopsy were proceeded with patient's consent by TL. CT-scan was reported as having a slight oedema in the recto-sigmoid region. The IUCD was inside the uterine cavity in the right position. Stomach was well visualised as well as small intestine and the remaining large bowel appeared normal. About 0.7 cm sized cyst was seen at the medial margin of segment VI of the liver. There was no sign of cirrhosis or portal hypertension. Liver, gall bladder and biliary tracts were normal. Pancreas, spleen, adrenal glands and kidneys were also normal. Urinary bladder was unremarkable. There was no pelvis or periaortic lymphadenopathy. About 2.3 cm x 2.5 cm sized corpus luteal cyst was noted at right ovary. Uterus was slightly enlarged in size. A mild degenerative disc disease (DDD) was seen at lower thoracic spine. A mild colitis at recto-sigmoid colon was to be considered other than malignancy as there was no visible mass in the region. **(Figure 1A and 1B).** An endoscopic procedure was further conducted to visualise the colonic mucosa. There was difficulty in intubation due to bowel adhesion at the rectosigmoid junction and induration of fat around the region, but there was no visible mass in the region. Mucosal oedema and erosions were also noticed on the surface at the same region

Figure 2A and 2B (yellow arrow) indicative of erosive colitis. It was less likely to be a malignant lesion but suspicious of extrauterine endometriosis. However, infiltrative malignancy could not be excluded. The bowel adhesions were possibly due to fibrosis and scarring. **Figure 2C and 2D** are the normal looking mucosal surfaces from the ascending and transverse colon. Four pieces of tissues were obtained from the colonoscopy. The selected piece of tissue was described here where the microscopic morphology was clearly identifiable. Microscopic features in **Figure 3A and 3B** are the H&E scanner view and 10x magnification of colonic mucosal glands (blue arrow) and endometrial glands with its surrounding loose stroma (yellow arrow), together in a single piece of tissue. **Figure 3C and 3D** are the H&E 20x and 40x magnification of colonic mucosa with regular mucin secreting glandular epithelium; **Figure 3E and 3F** are the H&E 20x and 40x magnification of endometrial tissue where subnuclear secretory activity in the glands and the spindly cellular intervening stroma were identified. (Figure 3A – 3F). This was reported by **LLT** and further confirmed by **MTT.**

Discussion

The number of case reports on extra-PE had been increased although it was previously thought to be rare. Recent research findings also emphasize on the risk and complications of endometriosis for its relationship to cancer and potential malignant transformation. The outcome of basic biomedical research and clinical research will further clarify, the aetiology and pathogenesis of extra-PE. Clinical awareness based on evidences and multidisciplinary approaches are necessary to obtain a prompt diagnosis and treatment. Hence, it is still necessary to conduct further exploration in reaching accurate diagnostic methods, appropriate choices of treatment for the effective outcome of extra-PE [13, 20-23].

Hyperestrinism is a significant risk factor for malignant transformation from endometriosis [24]. Factors such as high fibrotic content, reduced vascularity and cellularity are also necessary to be considered in the pathogenesis of endometriosis. Moreover, endometriotic lesions having cancer-associated mutations (CAM) could possibly influence and further explain to understand the pathophysiology and challenges facing in treatment [25, 26].

Research has been progressed into molecular techniques in providing clues for the aetiology and pathogenesis that are not explainable by epidemiological studies alone. Palla et.al in 2017 reported a case of endometriosis-associated tumours representing the malignant transformation of GI endometriosis. Such endometrioid adenocarcinoma simulates a primary colonic carcinoma. The researcher group emphasised on the role of immunohistochemistry using CK7, CK20, CDX2, CD10, ER, and PR as important indicators in reaching to a correct diagnosis. [27,28] Suda K et.al in 2018 highlighted the cancer-associated *KRAS* mutation with remarkable increases in mutant allele frequency (MAF) in endometriosis resulting in clonal expansion of the epithelial cells [29]. Gene mutations in *ARID1A, PIK3CA, KRAS, or PPP2R1A* provides further understandings on possible malignant transformation especially in the deep seated endometriotic lesions [20, 29]. Awareness by the clinicians also play a major role in patients presenting with cyclical bleeding per rectum. Management of the patient depends on the severity of symptoms, the site and extent of disease and the patient's decision in family planning [31]. Although extra-PE was previously thought to be unrelated to malignancy, current research has highlighted a relationship between endometriosis and certain types of neoplasms [29-32].

Currently, the detection of circulating microRNAs (miRNAs) has been studied as a potential biomarker for the clinical diagnosis of endometriosis [32].

Awareness of the disease and its possible differentials will aid in getting early diagnosis and appropriate treatment, avoiding unnecessary extensive surgery and complications [33]. Patients might wrongly seek for the consultation at a department other than gynaecology unit. In our case, patient first went to see a gastroenterologist.

Currently, a combination treatment on surgery and hormonal therapies are conducted, by suppressing ovulation and/or directly on steroid receptors located in endometriotic lesions [34]. Treatment of endometriosis should be planned individually for each patient, depending on the clinical presentation. From that, a maximum pain free period or remission of endometriosis can be reached [35]. The application of translational medicine from basic to clinical application is still in it miniature in the literature [36-37]. For the better understanding and treatment of extra-PE endometriosis, a collaborative approach between multiple discipline involving gynaecologists, general surgeons, thoracic surgeons, and clinicians to work together in managing these patients.

Conclusion

A case report and literature review is presented in this article, highlighting the value of multidisciplinary approach in reaching to the final diagnosis and appropriate management. A combination evidences of the endoscopic findings, CT-scan and histopathology from small endoscopic biopsy tissues together supported and confirmed the diagnosis without needing open extensive surgery. If facilities are available, immune-histochemical studies will strengthen the diagnostic accountability. This case was confirmed by a minimum invasive procedure. Diagnosis can be confirmed for further medical treatment rather than conducting unnecessary surgical intervention.

Authors' Contributions

MTT performed the laboratory diagnostic investigation and confirmation of the case. KSA and TL performed the case investigation, management and case review. LLH performed the preliminary diagnostic investigation and confirmation of the case. TTH performed the concept designing, literature search, manuscript preparation, writing and editing.

Conflicts of interest

There is no conflict of interest among the authors for the publication of this article.

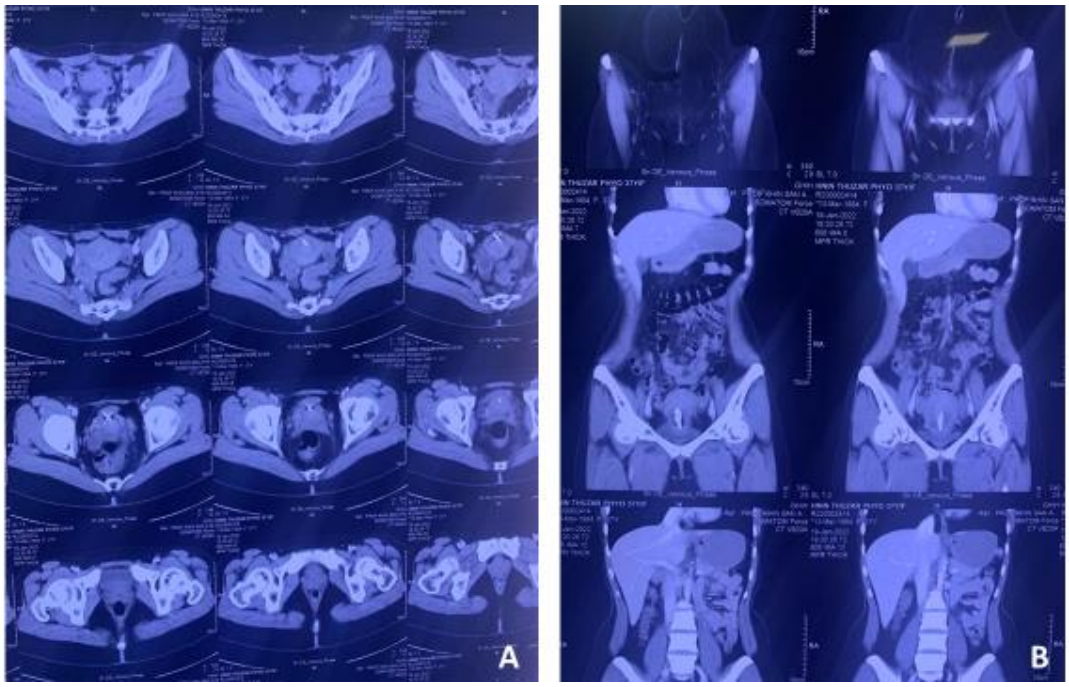

Figure 1A and 1B. CT Scan Images of the abdomen and pelvic show mild colitis of the recto-sigmoid colon. There is no visible mass. A mild hepatomegaly with a tiny cyst at the medial margin of segment VI of the liver and a small corpus luteal cyst at right ovary.

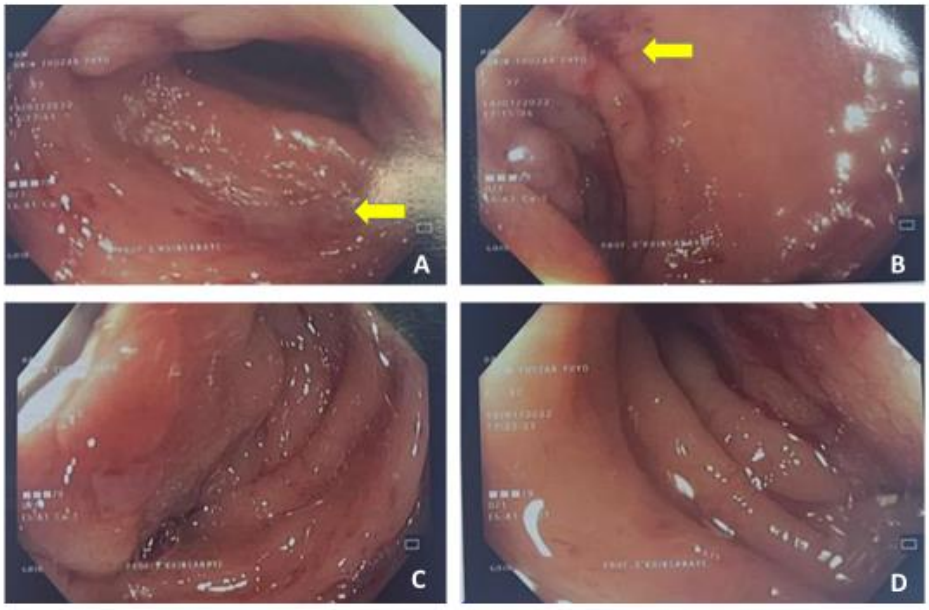

Figure 2A, 2B, 2C, and 2D. showing the mucosal appearance on colonoscopy. There were bowel adhesions with mucosal oedema and erosions on the surface at rectosigmoid junction in **Figure 2A and 2B (yellow arrow)** indicative of erosive colitis. It was less likely to be a malignant lesion and suspicious of extrauterine endometriosis. **Figure 2C and 2D** are the normal looking mucosal surfaces from the asceding and transverse colon.

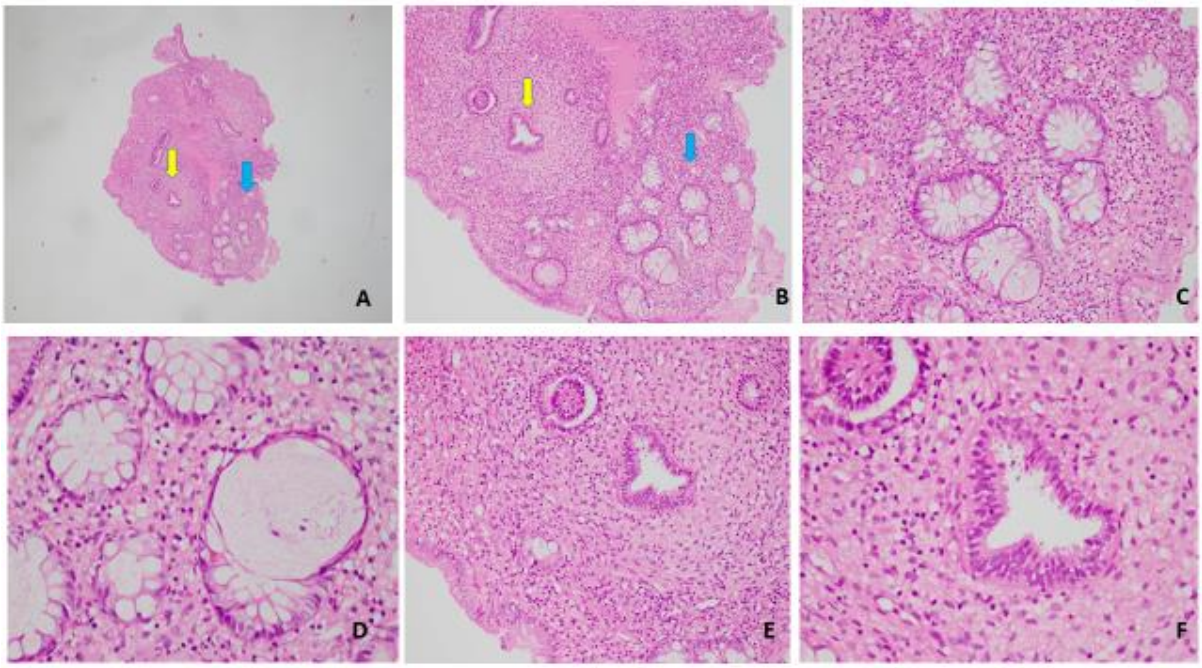

Figure 3A-F. Microscopic features in **Figure 3A and 3B** are the scanner view and 10x magnification of colonic mucosal glands (blue arrow) and endometrial glands with its surrounding stroma (yellow arrow) in a single piece of tissue, **Figure 3C and 3D** are the (20x and 40xmagnification) of colonic mucosa with regular mucin secreting glandular epithelium; **Figure 3E and 3F** are the (20x and 40xmagnification) of endometrial glands and stroma. Note the subnuclear secretory activitiy in the glands and a spindly cellular intervening stroma.

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