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A Rare Case of Endometriosis Presented as Acute Appendicitis

Hasbillah Mazlan[1*], Shafiq Rahman[1] and Norly Salleh[1,2]

[1]Department of Surgery, Hospital Segamat, KM 6, Jalan Genuang, 85000 Segamat, Johor, Malaysia.
[2]Satelite CRC, Hospital Segamat, KM 6, Jalan Genuang, 85000 Segamat, Johor, Malaysia.

Authors' contributions

This work was carried out in collaboration among all authors. Authors HM and SR designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author NS approved the manuscript. All authors read and approved the final manuscript.

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Case Report

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ABSTRACT

Background: Endometriosis is a common condition that can affect up to 15% of women of childbearing age and 2–5% of post-menopausal women. Endometriosis commonly involves the adnexa but can be present anywhere in the peritoneal cavity. Endometriosis involving the appendix is rare and preoperative diagnosis is difficult. Endometriosis of the appendix has been identified in less than 1% of patients with pelvic endometriosis. It is generally asymptomatic but may be associated with appendicitis, perforation and intussusception.
Case Presentation: A 22-year-old lady, with a regular menstrual history, presented with 5 days history of right iliac fossa pain. Examination revealed tenderness over right iliac fossa. Blood results were normal. Diagnosis of acute appendicitis is made. Open appendicectomy was performed which revealed an inflamed appendix. Histopathological examination of appendix reported as appendix endometriosis.
Conclusions: Appendiceal endometriosis affects women of childbearing age and may presents as acute appendicitis. As such, laparoscopic appendicectomy should be the gold standard for the treatment of acute appendicitis in women.

Keywords: Appendix; endometriosis; appendicectomy.

**Corresponding author: E-mail: hasbillahm@gmail.com;*

1. INTRODUCTION

Endometriosis of the appendix is rare. The prevalence of appendiceal endometriosis in patients with endometriosis is 2.8% [1]. Appendiceal endometriosis may present as appendicitis, mucocele of appendix, or appendicular mass that may mimic a neoplasm [2,3,4]. We report a case of 22-year-old lady with appendiceal endometriosis presented with acute appendicitis.

2. CASE REPORT

A 22-year-old lady, Para 1, with a regular menstrual history, presented to emergency department with 5 days history of localized right iliac fossa pain. The pain was throbbing in nature. There were no associated bowel symptoms. She denied any fever. Her menstrual history was unremarkable. Her last menstrual period (LMP) was 2 weeks prior to presentation. Upon examination, there was tenderness over right iliac fossa but no guarding. Her white cell count was 6.6 $x10^9$ /L. Other blood results were within normal range.

A clinical diagnosis of acute appendicitis was made. An open appendicectomy was done. Intraoperatively, appendix was inflamed, with a healthy base. There was no further inspection of gynaecological organs intraoperatively as no suspicious of their involvement at the time of intervention. The patient was discharged one day after operation.

Histopathology report of appendix specimen revealed endometrial tissue comprising of endometrial glands surrounded by endometrial stroma embedded within muscular wall and serosal layer of appendix. It was confirmed as appendiceal endometriosis. Patient was informed regarding the finding and referred to gynaecology team.

3. DISCUSSION

Endometriosisis a condition characterized by the growth of the endometrial tissue outside the uterine cavity. It was initially described by von Rokitan sky in1860. Endometriosis primarily affects the ovaries, utero-sacral ligaments, peritoneum, rectosigmoid and absolutely rarely the appendix [5]. Appendiceal endometriosis can be divided into primary and secondary forms. Primary form is endometriosis found within the appendix, whereas secondary form is associated with internal or external endometriosis [6].

According to Joe D et al. endometriosis found in gastrointestinal system are up to 12%, in which majority of it occurs in rectosigmoid region. Appendiceal endometriosis is rare, accounting for only 3% of cases [7]. In a study by Uohara et al. among 1,496 cases of appendicectomy, the frequency of appendiceal endometriosis is only 0.80% [7].

Currently, there is no universally accepted explanation for the occurrence of endometriosis at distant sites [7,5]. There are a few proposed theories on pathophysiology of appendiceal endometriosis. Among them were metaplasia theory and systemic metastasis theory. Metaplasia theory proposed that dormant, undifferentiated coelomic epithelial cells on the peritoneal surface started responding to cyclic hormonal stimulation after ovaries begin to function. Systemic metastasis theory meanwhile proposed that pieces of endometrial tissue may embolize through venous and lymphatic channels to distant sites such as the lungs or umbilical region [7].

Patients with appendiceal endometriosis may be categorized into four categories; the one presented with typical acute appendicitis, appendiceal invagination which may present as intussusception, atypical symptoms such as altered bowel habit or per rectal bleed, and asymptomatic [6]. In our case, this patient presented as typical acute appendicitis, hence the decision for open appendicectomy.

Laboratory tests are of limited value. CT of the abdomen and pelvis may show evidence of acute appendicitis or appendiceal abnormality. Laparoscopy is considered the gold standard for the diagnosis of endometriosis.

The histological diagnosis of endometriosis is readily made when both endometrial glands and stroma are present outside of the uterus [8]. In our case, the primary form of appendiceal endometriosis is evidenced by presence of endometrial glands and stroma in the appendiceal specimen as per Fig. 1 and Fig. 2 below.

The goal of surgical treatment of bowel endometriosis is to remove the disease and

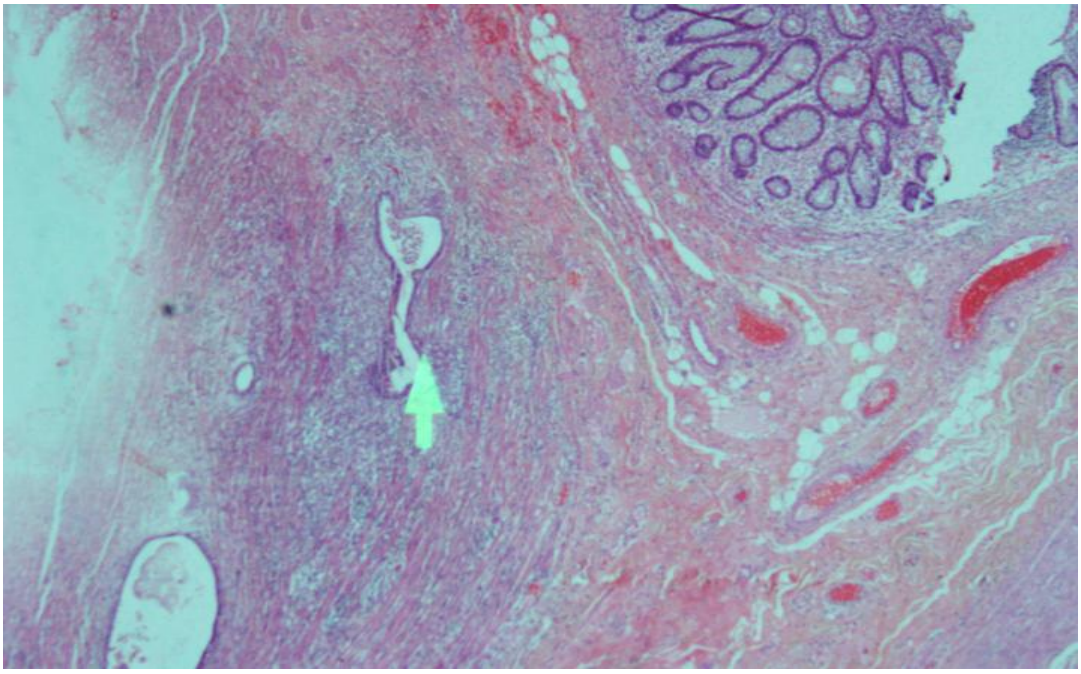

Fig. 1. Histopathological specimen of appendix of the patient showing foci of endometrial tissue comprising of endometrial gland surrounded by endometrial stroma embedded within the muscular wall and serosal layer of appendix

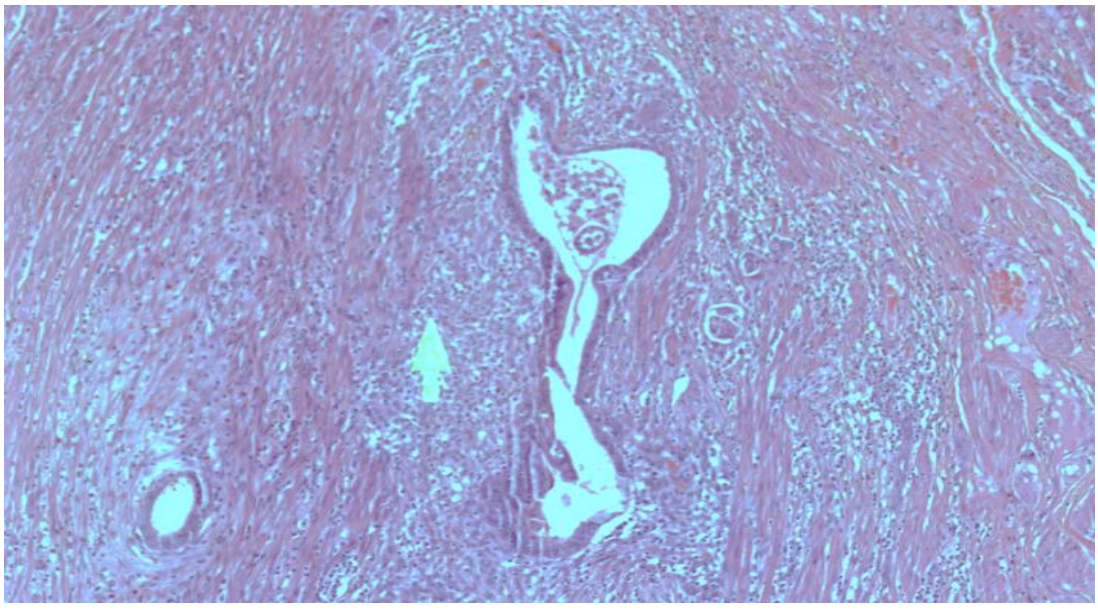

Fig. 2. Higher specification of foci of endometrial tissue comprising of endometrial gland surrounded by endometrial stroma

restore the bowel continuity and function, depending on patient's clinical findings. At laparotomy or laparoscopy intervention, a thorough examination should be carried out to rule out involvement of gynaecological organs. If patient presented with appendiceal intussusception, gentle traction is applied to reduce the intussuscepted appendix.

Malignancies or benign tumor of the appendiceal region can present with invagination. Ileocecec tomy or right hemicolectomy is performed if diagnosis remains unclear. As appendiceal endometriosis are easily missed by gross inspection, concurrent appendicectomy is recommended in patients with severe endometriosis [8].

4. CONCLUSION

Appendiceal endometriosis should be included in the differential diagnosis for acute abdominal pain, especially when women of childbearing age present with clinical symptoms of acute appendicitis. Appendiceal endometriosis is impossible to be diagnosed intraoperatively. As such, laparoscopic appendicectomy should be the gold standard for the treatment of acute appendicitis in women as it allows for better visualization and inspection of other gynaecological organs involved. However, the final diagnosis is only obtained with the histopathological report.

CONSENT

As per international standard or university standard, patient's consent has been collected and preserved by the authors.

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the authors.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Gustofson RL, Kim N, Liu S, Stratton P. Endometriosis and the appendix: A case series and comprehensive review of the literature. Fertility and Sterility. 2006;86(2):298–303.
2. Driman DK, Melega DE, Vilos GA, Plewes EA. Mucocele of the appendix secondary to endometriosis. Report of two cases, one with localized pseudomyxoma peritonei. Am J Clin Pathol. 2000;113(6):860-4.
3. Monika V, Serena W, Xuchen Z. Intestinal metaplasia of appendiceal endometriosis is not uncommon and may mimic appendiceal mucinous neoplasm. Pathology - Research and Practice. 2017;213(1):39-44.
4. Al Oulaqi NS, Hefny AF, Joshi S, Salim K, Abu-Zidan FM. Endometriosis of the appendix. Afr Health Sci. 2008;8(3):196-198.
5. Agarwal N, Subramanian A. Endometriosis - Morphology, clinical presentations and molecular pathology. J Lab Physicians. 2010;2(1):1-9.
6. Reyna-Villasmil E, Torres-Cepeda D, Labarca-Acosta M. Endometriosis del apéndice. Gastroenterol Hepatol. 2016;39:463–465.
7. Toru Hasegawaa, Koichi Yoshidab, Kazuhiro Matsuic. Case rep gastroenterol. 2007;1:27–31.
8. Abdulaziz Saleem, Paula Navarro, John L, Munson Jason Hall. International Journal of Surgery Case Reports. 2011;2(2):16–19.

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