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Appendiceal Endometriosis Causing Acute Appendicitis in Pregnancy

Chathura Egoda Arachchilage*, Sean Stevens, Sarah van der Hock, Amy Richardson

Abstract

Endometriosis is commonly seen in women of reproductive age, causing infertility and chronic pelvic pain. Endometriosis in pregnancy poses unique obstetric and neonatal risks, which must be carefully managed. A rare yet significant complication is the development of appendiceal endometriosis leading to acute appendicitis. This case report discusses the presentation of a pregnant women in her 30s with Gravida(G1) Parity(P1) in her third trimester diagnosed with appendiceal endometriosis causing acute appendicitis. The patient was managed surgically with a laparoscopic appendectomy and pelvic washout, after careful consideration of the surgical and anaesthetic risks to the mother and 32-week-old foetus. This case report highlights the importance of timely early recognition of acute surgical emergencies in pregnancies, use of ideal imaging modality, timely intervention, judicial use of antibiotics, post operative concerns would change the overall outcome to both mother and the baby.

Keywords: Endometriosis; Reproductive age; Infertility; Pregnant; Women; Neonatal risks; Pregnancy

Background

Endometriosis is defined by the presence of ectopic endometrial tissues outside the uterine cavity. It can affect pelvic organs including the ovaries and fallopian tubes, as well as the appendix, bowel, bladder, ureters, anterior abdominal wall, diaphragm, lungs, pericardium and brain [1]. It is estimated one in ten women of reproductive age are affected by endometriosis in Australia [2], yet appendiceal endometriosis (AE) accounts for less than 1% of all pelvic endometriosis lesions [3]. AE is commonly asymptomatic until presenting with symptoms of acute appendicitis including right lower quadrant pain, anorexia, fever and nausea [3].

Whilst acute appendicitis is among the most common surgical emergencies, acute appendicitis in pregnancy poses unique diagnostic and management challenges. In part due to the physiological and anatomical changes of the pregnant abdomen, ultrasound evaluation shows a low diagnostic accuracy for acute appendicitis in pregnant woman, particularly during the third trimester [4]. Because of diagnostic difficulties, a delay in treatment is not uncommon, leading to complications relating to perforation and peritonitis, which may lead to miscarriage, preterm labour, foetal loss or maternal mortality [4]. The surgical and anaesthetic risks to the foetus should be closely balanced with the risk of appendiceal perforation, abscess formation and sepsis in the mother.

Case Presentation

A pregnant woman in her 30s, G1and P1 presented at 32 weeks of gestation with a one-day history of right-sided lower abdominal pain and

Affiliation:
Austin Health Victoria, 145 Studley Rd, Heidelberg VIC 3084, Australia

***Corresponding Author**
Chathura Egoda Arachchilage, Austin Health Victoria, 145 Studley Rd, Heidelberg VIC 3084, Australia.

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tenderness without any focal peritonism associated with raised inflammatory markers. The patient did not have any past medical history of relevance. She was referred to the General Surgery Team with clinical signs of acute appendicitis and an unremarkable ultrasound of the abdomen and pelvis.

Although, initial imaging doesn't suggest any evidence of appendicitis, given high clinical suspicion, there was low threshold to commence antibiotics at the time of presentation.

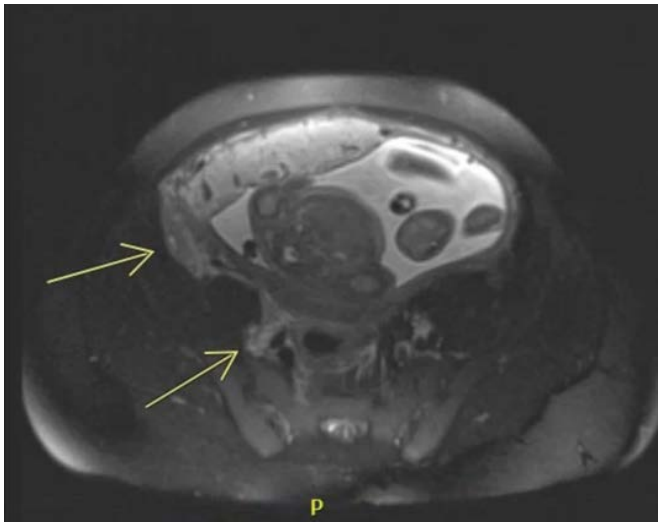

Figure 1: MRI of the pelvis showing evidence of mild fat stranding with a small amount of free fluid in the pelvis.

Due to high clinical suspicion of appendicitis, an urgent MRI was planned overnight, showing evidence of mild fat stranding with small amount of free fluid in the pelvis (Figure 1), raising concern for acute appendicitis and taken to theatre within next 12 hours and underwent for laparoscopic appendicectomy.

Given the patient's gestational age, initial laparoscopic ports were placed, 5mm ports made over right upper quadrant and mid-way between Hasan port and suprapubic after initial Hasan entry, where usually we make 5mm ports over supra-pubic and left lower quadrant providing better access to explore her pelvic cavity. Intraoperatively, the appendix was found to be perforated with localised collection. An appendicectomy and pelvic washout were performed.

Outcome

The patient and foetus were monitored with cardiotocography for 24 hours with ongoing Intravenous Augmentin and ceased day 4 post appendicectomy with daily monitoring of inflammatory markers, here we have used antibiotics judicially given the risk of antibiotics induced colitis[9] and again increases the risk of for preterm labour[10]. The histopathological result of the appendix confirmed acute suppurative appendicitis secondary to extensive decidualised endometriosis. (Figure 2 and 3).

As planned during the discharge, patient went on to have an uncomplicated vaginal delivery at term recently without any complications.

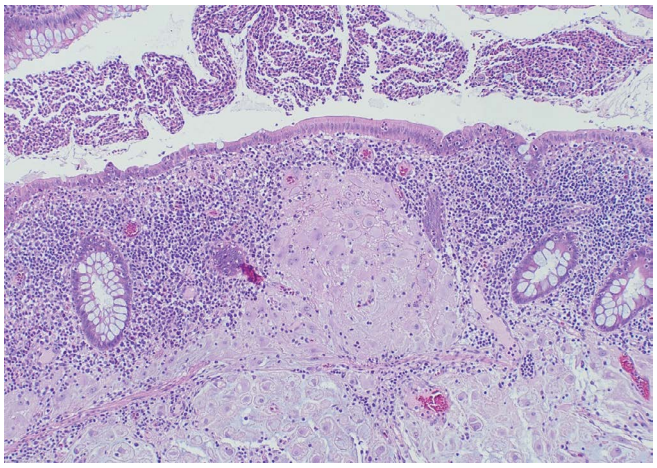

Figure 2: Appendiceal lumen containing a polymorphous inflammatory cell population and nodular aggregates of deciduosis within the lamina propria and submucosa.

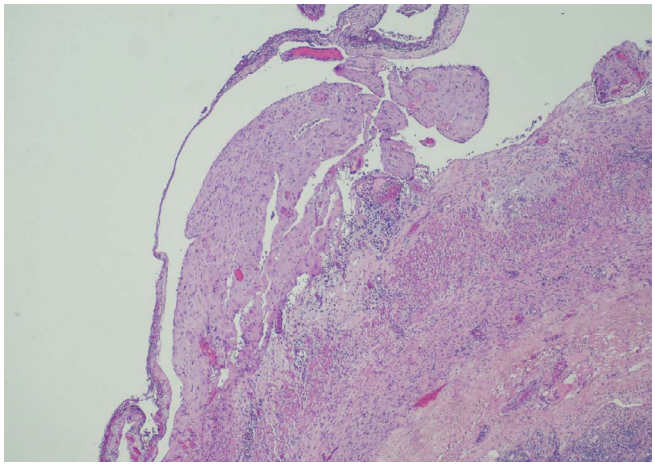

Figure 3: Deciduosis adherent to the appendiceal serosal surface associated with a transmural polymorphous inflammatory cell infiltrate.

Discussion

Appendiceal endometriosis (AE) is a rare clinical manifestation of endometriosis among the reproductive age group, with its prevalence ranging from 0.05% to 1.7% in patients with endometriosis, and accounts for less than 1% of cases of acute appendicitis. AE during pregnancy is exceptionally rare and diagnostic difficulties associated with the pregnant abdomen can cause treatment delays. Compared with nonpregnant women, pregnant women with acute appendicitis have higher rates of adverse outcomes [5]. A study of twenty-two pregnancies with appendicitis demonstrated an exceptionally high perforation rate of 57%, as was found in our case report, demonstrating rates of overall

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morbidity associated with appendicitis were higher among pregnant women [5,6]. Pregnancy was traditionally believed to improve endometriosis symptoms; however, a growing body of literature suggests this may not always be the case. While some endometriotic lesions may regress, others remain stable or increase [7]. Therefore, clinicians should exhibit a high clinical suspicion for obstetric problems relating to endometriosis including intestinal perforation, spontaneous hemoperitoneum, infection of endometrioma, rupture of fallopian tubes and spontaneous pneumothorax [7].

Laparoscopic appendectomy is the preferred surgical approach for acute appendicitis in the non-obstetric population. However, there is limited data available for the preferred surgical approach in pregnant patients. It depends on a myriad of factors pertaining to gestational age, surgeon expertise, and patient-specific factors. Recent studies favour a laparoscopic approach in all trimesters of pregnancy [5], due to the faster recovery time and lower rate of preterm delivery [8]. In third trimester, studies show longer operative times and higher conversion rates to open surgery related to the gravid uterus [8].

Learning Outcome

This case study presents the noteworthy clinical phenomena of appendiceal endometriosis leading to acute appendicitis in woman in her 30s in her third trimester of pregnancy. Although uncommon, clinicians should maintain a high index of suspicion in pregnant patients presenting with right lower quadrant pain and known endometriosis. Optimal management requires close collaboration between general surgeons and obstetricians to balance both maternal and foetal risks.

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