

APPENDICITIS WITH PERIAPPENDICEAL ABSCESS AND PHLEGMON IN SECOND TRIMESTER PREGNANCY: A CASE REPORT

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ABSTRACT

INTRODUCTION

There are anatomical, physiological and biochemical changes in all human body systems during pregnancy and these changes can often be misinterpreted as pathological. The unreliable nature of complaint reports, examination findings and laboratory parameters in appendicitis cases during pregnancy makes it challenging for physicians to diagnose and manage cases effectively. So, we present a case report with its presentation dangling between its typical and atypical form.

KEYWORDS

Appendiceal perforation, Appendicitis, Pregnancy

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INTRODUCTION

Acute appendicitis has been one of the common non-obstetrical surgical emergency encountered during pregnancy.¹ Diagnosis of appendicitis can be challenging due to its non-classic presentation during pregnancy or its similarity to abdominal discomfort and other symptom brought on by pregnancy resulting in delayed diagnosis. Acute appendicitis is suspected in 1 in 600 to 1 in 800 pregnancies and confirmed in 1 in 800 to 1 in 1500 pregnancies.¹ The incidence is bit higher in the second trimester.²

CASE REPORT

A 30 year old female with Gravida-3, Parity-1, Living-1, Abortion-1 at 16 week of gestation presented to our tertiary hospital emergency with four day history of constant right lower quadrant pain, gradual in onset, non – radiating, mildly increasing in severity associated with 4-6 episodes of vomiting, which was non projectile, preceded with nausea, aggravated on eating. It is associated with anorexia, on and off fever lasting for 2 days. She denied having vaginal bleeding, dysuria, diarrhea.

Abdominal examination revealed a gravid uterus of 16 weeks size along with mild tenderness in the right iliac fossa with no rebound tenderness, abdominal guarding. Physical examination of the other systems were unremarkable.

Vitals and laboratory parameters were within normal limits except Hemoglobin 9.1g/dl, White Blood Count 15,700/mm³ (Lymphocyte 13%, Neutrophil 78%), PCV 27.6%.

Ultrasonography revealed bulky appendix with mild diffuse mural edema and hyperemia with maximal outer diameter of 8.2 mm along with complex dense adjacent collection approximately 8ml and inflamed, edematous fat surrounding inflamed appendix.

Based on clinical and imaging findings, diagnosis of acute appendicitis with periappendiceal abscess and phlegmon was made. An open appendectomy was performed under sub-arachnoid block with a Gridiron incision. An operative findings were approximately 5 mL of pus with gangrenous tip with healthy base. There was no intraoperative or post-operative complication and patient was discharged on fifth post-operative day.

Histological microscopic analysis of the appendix showed focally preserved mucosa with surface ulceration comprising mixed inflammatory cells, fibrin and hemorrhages. There was presence of trans-mural inflammation consisting of neutrophils, eosinophil, foamy macrophages with involvement of lamina propria, muscularis propria, submucosa and serosa along with myolysis.

DISCUSSION

Appendicitis in pregnancy is common non-obstetrical emergency surgical problem.¹ The rate of diagnosing appendicitis is highest in third trimester and lowest in second trimester.³ The traditional obstetric teaching has taught us that with the changes in appendiceal location as the gestational age advances, patients with appendicitis during pregnancy experience right upper quadrant pain but this notion has been

challenged by a study which states that regardless of the gestational age majority of the patients with acute appendicitis during pregnancy commonly experience pain in the right lower quadrant.⁴ As gestational age advances and uterus becomes enlarged in addition to the physiologic leukocytosis of pregnancy (which has been defined as high as 16000 cells/microL) the attending physician finds himself/herself in a state of dilemma diagnostically.³

The abdominal wall loosens as the size of uterus increases with advancing gestational age and valuable signs such as rebound tenderness, muscle guarding becomes less obvious to be elucidated on abdominal examination.³ It's non-classical presentation with symptoms such as heartburn, bowel irregularity, tenesmus, flatulence, malaise or diarrhea makes it even more difficult to diagnose. It is common but if it gets undiagnosed it can serve as a precursor to the development of life threatening complications, the most lethal being the perforation of appendix which can be fatal both to the mother as well as the fetus. Though the maternal mortality has reduced in the recent decades, once perforation occurs maternal complications still remains dramatically high.¹ 1.5% fetal loss was observed in cases of non-perforated appendix and percentage increased to 35.7% in cases where appendix perforated.³ It is not uncommon to have atypical presentation of appendicitis in pregnancy so in order to be certain, imaging studies are recommended.⁵ Graded compression ultrasonography should be used as the earliest imaging modality.⁶ Several studies have reported non-visualization of appendix on ultrasonography in pregnancy but this does not exclude the diagnosis of appendicitis in pregnancy.⁵ In the presence of atypical presentation (which is not uncommon during pregnancy) in conjunction with inconclusive ultrasonography (especially in the third trimester due to enlarged uterus), the American college of radiology recommends the use of Nuclear Magnetic Resonance Imaging as the next effective alternative imaging modality for cases of suspected appendicitis, if available.⁵ Computed Tomography can also be used as a last resort imaging modality in situations where both clinical examination and ultrasonography is inconclusive or magnetic resonance imaging is unavailable but it is associated with exposure to radiation.

Appendectomy is the curative treatment for acute appendicitis which can be performed either by laparoscopic or an open approach but laparoscopic approach is associated with increased incidence of preterm delivery, increase rate of fetal loss in comparison to open approach therefore an open approach is considered more suitable in pregnancy.^{1,5} When the diagnosis of appendicitis in pregnancy is certain, open appendectomy is performed by giving a transverse incision at Mcburney's point or point of maximal tenderness.^{7,8} A normal seeming appendix if found during surgical intervention, must be removed for histological analysis and appendectomy is associated with very low risk of complications.⁵ Antibiotic therapy alone is associated with increased risk of preterm premature rupture of membrane and preterm labor or delivery but in conditions where appropriate intervention and skill is not readily available antibiotic therapy may be appropriate.^{1,6} The problem of acute appendicitis in pregnancy is common yet it is not so commonly diagnosed with certainty, requires a thorough approach in terms of history, physical examination, precise imaging in order to provide curative treatment for this common problem.

CONCLUSION

To diagnose appendicitis accurately during pregnancy, high level of suspicion and competent clinical skills are required, not only relying on the classic signs and imaging modalities since imaging may not show significant abnormalities. Early surgical intervention is required and delaying the treatment will only tip the scale towards the fatality of both the mother and fetus. Primary care providers must do all what they can in order to reduce the negative outcome.

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