

A Study to Determine the Most Common Obstetric and Non-Obstetric Causes of Acute Abdominal Condition in Pregnancy

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Abstract

Aim: The aim of the present study was to determine the most common causes of acute abdominal condition in pregnancy.

Methods: The present study was conducted in the Department of obstetrics and gynecology, Patna medical College and Hospital, Patna, Bihar, India for the period of one year. The study included 100 Pregnant females in different trimester that was presented to the emergency department with acute abdominal pain of obstetric and non-obstetric causes which included 60 obstetric cases and 40 no-obstetric case Patient age vary from 10- 50 years.

Results: The age group (31-40 years) revealed the high incidence of acute abdomen including obstetric and non-obstetric causes. In our study report that the ectopic pregnancy was the most common cause of acute abdomen for all age group enrolled about forty patients (40%) were referred to the emergency unit for acute abdomen. This study showed that ectopic pregnancy was the first cause of acute abdomen in all trimesters which revealed about forty patients (40%). A current study showed that the incidence of acute abdomen was seventy two patients (72%).

Conclusion: The most common cause of acute abdomen in pregnancy is ectopic pregnancy followed by acute appendicitis. AAP can be due to obstetric as well as non-obstetric causes. Life-threatening pathologies may not manifest with classical presentations. Nonionizing examinations are preferred as the first line of radiological investigation. Investigations using ionizing radiations, such as X-ray and CT scan, are generally safe and should not be withheld if there is a definite clinical indication and there is no other alternative, especially in life-threatening conditions.

Keywords: Appendicitis, Acute, Abdomen, pregnancy

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Introduction

Acute abdominal pain in pregnant patients presents a difficult diagnostic challenge. The differential diagnosis during pregnancy is extensive in that the abdominal pain may be obstetric in nature

or may be caused by disease of other intraabdominal or intra-pelvic structures. [1] It is associated with a long differential diagnosis, and diagnostic imaging is often required to guide management. [2]

Because of the anatomic and physiologic changes that occur with pregnancy, localization of disease can be difficult. [3]

Acute abdomen in pregnancy (AAP) represents a unique diagnostic and therapeutic challenge. The term acute abdomen refers to any serious acute intra-abdominal condition accompanied by pain, tenderness, and muscular rigidity, for which emergency surgery should be contemplated. [4] It is often indicative of a clinical course of abdominal symptoms that can range from minutes to hours to weeks and is commonly used synonymously for a condition that requires immediate surgical intervention. [5] The wide range of causes and varied spectrum of clinical presentations pose a formidable diagnostic and therapeutic challenge.

Acute abdominal pain in pregnancy can be due to obstetric as well as non-obstetric etiologies. The physiological changes of pregnancy increase the risk of developing an acute abdomen. As for non-obstetric causes, any gastrointestinal (GI) disorder can occur during pregnancy. About 0.5%–2% of all pregnant women require surgery for non-obstetric acute abdomen. [6,7]

An expeditious workup is necessary when evaluating patients presenting with acute abdominal pain to determine the most likely cause of their symptoms and determine whether or not emergent operative intervention is necessary. The most appropriate therapy should then be initiated with the patient's clinical status optimized. The workup should first include a thorough but efficient acquisition of the patient's history and physical examination followed by the judicious use of laboratory and radiologic studies. [8] Causes of acute abdomen in pregnancy include ectopic pregnancy, peduncular torsion of an ovarian cyst, ovarian bleeding, and pelvic inflammation. [9] However, it may also be caused by such illnesses as acute appendicitis, ileus, and cholecystitis. [10] Appendicitis is the most

common cause of the acute abdomen during pregnancy, occurring with a usual frequency of 1 in 500–2000 pregnancies, which amounts to 25% of operative indications for non-obstetric surgery during pregnancy. Surgeons are most frequently confronted with pregnant women suffering from acute abdominal pain due to appendicitis. [11]

Acute abdomen in pregnancy remains one of the most challenging diagnostic and therapeutic dilemmas today. [11] The evaluation of patients with acute abdominal pain can pose a diagnostic challenge for physicians as patients may present with atypical symptoms that interfere with the usual pattern recognition that often guides decision making. These atypical presentations may help account for the over 25% of abdominal pain cases labeled as “nonspecific” or “undifferentiated.” [8]

Sonography remains the first line of imaging in pregnant patients presenting with acute abdomen. Patient triage or additional imaging may be obtained on the bases of US findings. [12] In many respects abdominal pain in pregnancy is managed just as in non-pregnant patient. Surgical treatment is indicated in most cases but the diagnostic criteria, methods of diagnosis therapy, and consequences of mismanagement differ. Laparoscopic procedures in the treatment of acute abdomen in pregnancy have proved safe and accurate, and in selected groups of patients are becoming the procedures of choice with a perspective for the widening of such indications with more frequent use. [13]

The aim of the present study was to determine the most common causes of acute abdominal condition in pregnancy.

Materials And Methods

The present study was conducted in the Department of Obstetrics and Gynecology, Patna medical College and Hospital, Patna, Bihar, India for the period of one year. The

study included 100 Pregnant females in different trimester that was presented to the emergency department with acute abdominal pain of obstetric and non-obstetric causes which included 60 obstetric cases and 40 no-obstetric case Patient age vary from 10- 50 years.

Methodology

We divided these cases into obstetric and non –obstetric causes according to result of clinical examination and laboratory investigation. Detailed history /proper physical examination, vital sign, abdominal and pelvic ultrasound and laboratory investigation were taken. Patient history should focus on details of the pain.

This includes information on the onset, character, duration and location of pain as well as the presence of radiation of pain. A detailed social history should also be obtained to determine if there is any significant history of tobacco, alcohol or illicit drug use as such behaviors can be a source of the patient's symptoms as well as complicate the patient's hospital course. Detailed gynecologic history, including the date of the last menses, the presence of any

vaginal bleeding or discharge and any history of unprotected sexual activity or intercourse were noted.

Examination of the abdomen should comprise four sequential.

Components:

1. Inspection
2. Auscultation
3. Percussion
4. Palpation

The exam should include all areas of the abdomen, flanks and groins. All patients send for CBP, blood urea, serum creatinine LFT, GUE. And all patients send for US of the abdomen according to the result of history, physical examination laboratory and radiological investigation, acute abdominal condition divided into obstetric and non-obstetric causes.

Statistical analysis

Data was analyzed using commercially available software (statistical package for social sciences, SPSS version 17).

Results

Table 1: Age distribution of obstetric and non-obstetric cases

Age group (years)	Ectopic pregnancy	No. of Abruptio Placenta	Hellp syndrome	Acute Append.	Acute Cholecyt.	Twisted ovarian cyst	Total
10-20	12(12%)	3(3%)	0	0	0	0	15(15%)
21-30	17(17%)	5(5%)	2(2%)	0	0	10(10%)	34(34%)
31-40	10(10%)	5(5%)	1(1%)	20(20%)	12(12%)	0	48(48%)
41-50	1(1%)	2(2%)	0	0	0	0	3(3%)
Total	40 (40%)	15 (15%)	3 (3%)	20(20%)	12(12%)	10(10%)	100

The age group (10-20 years); first show ectopic pregnancy which revealed about twelve patient (12%), followed by abruptio placenta which was revealed about three patient (3%).While age group (21-30 years); ectopic pregnancy was the first cause which revealed about seventeen patients (17%) followed by complicate ovarian cyst which reported about twelve patient (10%) followed by abruptio

placenta which revealed about seven patient (5%), then followed by hellp syndrome which revealed about two patients (2%). Our study showed in the age group (31-40 years) that the first cause of acute abdomen was acute appendicitis which revealed about twenty patients (20%), followed by acute cholecystitis which revealed about seventeen patient (12%), followed by ectopic pregnancy

which revealed about eleven patient (10%), followed by abruption placenta which reported about seven patient (5%). While age group (41-50 years) revealed that the most common cause was abruption placenta which revealed about two patients (2%), followed by ectopic pregnancy which revealed about one patient, (01%). The age group (31-40

years) revealed the high incidence of acute abdomen including obstetric and non-obstetric causes. In our study report that the ectopic pregnancy was the most common cause of acute abdomen for all age group enrolled about forty patients (40%) were referred to the emergency unit for acute abdomen.

Table 2: Distribution of obstetric and non-obstetric causes according to the trimesters

Trimesters	Ectopic pregnancy	No. of Abruptio placenta	Hellp syndrome	Acute Append.	Acute Cholecyt.	Twisted ovarian cyst	Total
1st T.	40(40%)	0	0	15(15%)	12(12%)	5(5%)	72(72%)
2nd T.	0	2(2%)	0	4(4%)	2(2%)	5(5%)	13(13%)
3rd T.	0	12(12)	3(3%)	0	0	0	15(15%)

The result as shown in table (2) of obstetric and non-obstetric causes according to the trimesters report that ectopic pregnancy was the first cause of acute abdomen in the first trimester which revealed about forty patients (40%) followed by acute appendicitis which reported about fifteen patients (15%) followed by acute cholecystitis which revealed about twelve patient (12%) then twisted ovarian cyst which reported about seven patient (5%). In the second trimester, result showed that acute appendicitis were 4% and twisted ovarian cyst were revealed about five patient (5%) followed by abruptio placenta which revealed about three patient (2%) then acute cholecystitis which revealed about two patient (2%). In the third trimester showed that abruption placenta was the First cause of acute abdomen which revealed about twelve patients (12%). Then help syndrome which revealed about three patients (3%). This study showed that ectopic pregnancy was the first cause of acute abdomen in all trimesters which revealed about forty patients (40%). A current study showed that the incidence of acute abdomen was seventy two patients (72%).

Discussion

The management of acute abdominal pain in pregnancy is challenging for a variety of reasons. Complications and conditions that are associated with or unrelated to pregnancy (urinary tract disorders, gastrointestinal and vascular diseases) may cause abdominal pain or the acute abdomen. [14] The diagnosis of acute abdominal pain in pregnant women is particularly difficult because of multiple confounding factors related to normal pregnancy: nonspecific leukocytosis, displacement of abdominal and pelvic structures from their normal locations by the gravid uterus, difficult abdominal examination, and nonspecific nausea and vomiting. [15] Prompt diagnosis and treatment are crucial for the well-being of the mother and the fetus, and imaging is often required to clarify the clinical picture.

Early marriage before the peak age for appendicitis, which is the most common cause of acute abdomen in this and other studies, and repeated pregnancies in this population, going on well into advanced age, gives a higher probability for acute abdomen occurring during a pregnancy. [16] Although a surgical procedure during pregnancy carries the risk of fetal loss in preterm delivery or dysmaturity of the fetus, when acute abdomen is suspected,

an aggressive approach is recommended as delay in diagnosis increases the risk of complications in both mother and fetus, with maternal or fetal death being most feared. [17] Sonography remains the first line of imaging in pregnant patients presenting with acute abdomen.

In patients with abdominal symptoms the indication either for CT or MR depends on the presumed disease. Every abdominal CT during pregnancy should include an estimation of radiation dose, but when required, low-dose CT of the abdomen and pelvis can be performed with minimal risk. [11] Magnetic resonance imaging (MRI) is preferable to computerized tomography (CT) scanning during pregnancy to avoid ionizing radiation, but gadolinium administration should be avoided during the first trimester. [18,19]

Laparoscopy appears to be well tolerated in pregnancy, but larger multicenter prospective studies are required to make better recommendations concerning its use. [20] This technique has been used for the resolution of acute abdominal surgical conditions in the first and second trimesters of pregnancy for years. There are few case reports, however, regarding its use in rare presentations of the acute abdomen later in pregnancy. [21] The age group (31-40 years) revealed the high incidence of acute abdomen including obstetric and non-obstetric causes. In our study report that the ectopic pregnancy was the most common cause of acute abdomen for all age group enrolled about forty patients (40%) were referred to the emergency unit for acute abdomen. Other study shows that the risk factor for ectopic pregnancy include prior ectopic pregnancy [22,23], advanced maternal age. [24] And placental abruption occur in about 1 of 80 deliveries [25] risk factor include advanced maternal age an incidence similar to that of acute appendicitis. [26]

Pregnancy, however, does not seem to increase the severity of gallstone

complications. Acute cholecystitis is a chemical inflammation usually caused by cystic duct obstruction and supersaturated bile. [27] It is the third most common non - obstetric surgical emergency during pregnancy Torsion usually occurs between the sixth and fourteenth weeks of gestation. Acute appendicitis is the most common non obstetric surgical emergency during pregnancy, with an incidence of about 1.0 in 1000 pregnancies. [23]

Conclusion

The most common cause of acute abdomen in pregnancy is ectopic pregnancy followed by acute appendicitis. AAP can be due to obstetric as well as non-obstetric causes. Life-threatening pathologies may not manifest with classical presentations. Nonionizing examinations are preferred as the first line of radiological investigation. Investigations using ionizing radiations, such as X-ray and CT scan, are generally safe and should not be withheld if there is a definite clinical indication and there is no other alternative, especially in life-threatening conditions. Laparoscopic surgery is feasible and safe in selected patients. A clear understanding of the anatomical and physiological changes in pregnancy, systematic clinical evaluation, adequate knowledge of the safe limits of radiological investigations, and a multidisciplinary approach are indispensable for timely diagnosis and treatment of pregnant women presenting with acute abdomen.

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