Acute Abdomen in Gynaecological Practice

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Abstract

Acute abdomen in pregnancy is due to consequence of pregnancy itself or is totally unrelated to pregnancy. During pregnancy, a woman is at an increased risk of acute abdomen due to various physiological changes. The article discusses the various conditions which can present as acute abdomen in women during pregnancy and in non-pregnant state. The clinician often has a difficult task in diagnosing and managing acute abdomen in pregnancy. Clinical evaluation is further confounded by various anatomical and physiological changes occurring in pregnancy. The growing gravid uterus too causes difficulty in detailed examination. The general reluctance to use conventional X-rays because of pregnancy should be set aside when faced with a seriously ill mother. A reluctance to operate during pregnancy adds unnecessary delay, which increases morbidity for both the mother and the fetus. Adnexal accidents should always be kept in mind in a woman with acute abdomen even if she is not pregnant. Such mistakes should be avoided as prompt diagnosis and appropriate therapy are crucial. A general approach to acute abdominal conditions in pregnancy is to manage these problems considering the risk to mother regardless of the pregnancy.

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Introduction

Evaluation of a female patient presenting with an acute abdomen must always consider surgical and gynecologic disorders in a pregnant or non pregnant state. Laparoscopy has a major impact on the surgical approach in gynaecology. Most cases of acute abdomen can now be approached laparoscopically [1]. Certain conditions however still require the traditional laparotomy. Preservation of reproductive capability has a major impact on the well being of a woman. Acute abdomen can present with either obstetrical or gynaecological conditions. Obstetrical causes of acute abdomen are dangerous as they may be potentially fatal and involve both the mother and fetus.

Non obstetrical abdominal surgery in the pregnant patient can be both diagnostically and technically challenging. Delay in diagnosis and definitive treatment represents the most common reason for the poor outcome of mother and fetus [2]. The diagnostic delay in pregnancy is because of several reasons. Often the patient and the doctor attribute certain vital signs and symptoms of disease exaggerating due to pregnancy itself. The pregnant abdomen may mask several classic findings of the disease. Added to above, many physicians tend to be more reluctant to subject the patient to special investigations even when it is considered to be essential. This results in delay of diagnosis with increase in morbidity and mortality.

The issue of whether or not to administer prophylactic perioperative tocolysis to prevent preterm labour has not been resolved. The prophylactic use of beta-adrenergic tocolytic agent is not recommended because of the potential side effect of vasodilation. If premature contractions ensue, a single dose of terbutaline may be used. Magnesium sulphate may be added for long term tocolysis. Allen et al [3] showed fetal mortality of 2% and emphasized the fact that most fetal losses occur within one week of surgery. This is mostly attributed to the increased consequence of surgical intervention. Mazze and Kallen [4] in their study also support the same view. There was no increased risk of stillbirth or congenital malformations in 5405 women who underwent non obstetric operations in Sweden from the years 1973 to 1981.

Role of Laparoscopy

Diagnostic and therapeutic laparoscopy has increased over the decade with out increase in maternal and fetal complications. Reedy et al [5] reported 413 laparoscopic procedures performed during pregnancy. The most common laparoscopic surgery in pregnancy in this survey was cholecystectomy at 48.1%, surgeries of adnexa were 28%, appendectomies 16.2% and 7.5% were miscellaneous. Majority of the surgeries were performed in second trimester (54%). They concluded that

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laparoscopic surgery is safe during pregnancy as there was no increase in adverse maternal or fetal complications. However these retrospective surveys do not carry the same scientific significance as a prospective randomized study. Bordelon and Hunter [6] identified following issues for laparoscopy in a pregnant woman. They advocated safe laparoscopic access with a gravid uterus to avoid increased risk of injury. The trocar entry site for smooth conduct of the procedure in presence of enlarged uterus needs to be modified accordingly. Finally the possible adverse effect of pneumoperitoneum on fetal pathophysiology and blood flow should be identified for intra operative management.

Obstetrical Conditions

Acute abdomen in pregnancy poses a challenge to the attending physician as physiological changes that occur during the pregnancy will alter the clinical presentation of many conditions. In addition the reluctance to perform some diagnostic and surgical procedures during pregnancy often results in delay of diagnosis and definitive treatment [7]. The pain in pregnancy may be result of:

a. Physiological effects of pregnancy, b. Pathological conditions related to pregnancy, c. Pathological conditions unrelated to pregnancy

Physiological Conditions in Pregnancy

1. **Round Ligament Pain:** The pain is described as cramp like or stabbing which is made worse by movement and felt in the lower quadrant of uterus. It radiates to the groin and is associated with some tenderness over the area of round ligaments. This occurs in 10-30% of all pregnancies mostly in multigravidas. It commonly occurs towards the end of first trimester or second trimester.

Clinical Significance: It may be confused with pathological conditions like appendicitis, ovarian accidents, preterm uterine activity, placental abruption or urinary tract infection. The treatment of round ligament pain is by reassurance and rarely analgesics.

2. **Severe Uterine Torsion:** Mild asymptomatic axial rotation of the uterus to the right of about 40° is observed in majority of the pregnancies. Rarely this rotation progresses beyond 90° thus producing torsion causing severe pain in the third trimester of pregnancy. In 80–90% of the cases there are predisposing factors like fibroid, diadelphic horn of gravid uterus or history of adnexal pathology.

Clinical Significance: Fetal asphyxia and maternal vasovagal shock are the main risk. True diagnosis is made on laparotomy. Diagnosis before laparotomy warrants initiation of conservative management like bed rest, analgesia and altering position of the mother. If the fetus is viable, the consensus is to unwind the uterus and perform a caesarean section. When the fetus has not attained period of viability it may be necessary to untwist the uterus during laparotomy and wait for the fetal viability.

Pathological Conditions related to Pregnancy:

The conditions can be broadly divided into two groups:

a. Pathology related to Uterus

b. Pathology related to Adnexa

Pathology Related to Uterus:

1. **Abortions:** It is the most common pathological cause of pain in the first trimester of pregnancy. Vaginal bleeding and cramp like pain is commonly seen in inevitable or incomplete abortion. However pain may not be a predominant symptom in cases of threatened abortion. The rare possibility of heterotrophic pregnancy should always be considered with extrauterine and intrauterine gestation commonly seen after artificial reproductive techniques.

Clinical Significance: Diagnosis is usually clinical and can be confirmed by ultrasound. Treatment is by suction and evacuation in cases of incomplete, inevitable or missed abortions.

2. **Leiomyoma Uterus:** About 10% of pregnant patients with leiomyoma experience abdominal pain associated with red or carneous degeneration. This is because of hemorrhagic infarction and thrombosis of the blood supplying to the tumor. The pain and tenderness is localized with low grade fever and leukocytosis. Intrapartum it may mimic abruption or rupture of the uterus. Pain may also arise from torsion of the pedunculated fibroid. Ultrasonography reveals fibroid at the site of maximum tenderness and helps in confirming the diagnosis.

Clinical Significance: Incorrect diagnosis leading to unwarranted surgical interventions often results in maternal fetal morbidity and mortality. It is often confused with acute appendicitis, acute pyelonephritis and placental abruption. Myomas larger than 3 cm increase the risk of preterm labour and placental abruption [8]. Management is conservative with analgesics until the pain subsides. Myomectomy during the pregnancy is to be avoided unless the Myomas are pedunculated.

3. **Placental Abruption:** Acute abdominal pain in 0.5–1% pregnancies could be because of placental abruption. Pain is very severe and of sharp with tearing nature. It is commonly associated with hypertension, multiple pregnancy, smoking and leiomyoma. It may or may not be associated with vaginal bleeding. The blood