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Evaluation of acute abdominal condition in pregnancy

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Abstract

Background: Acute abdomen is a general term for acute abdominal diseases accompanied primarily by sudden abdominal pain for which a decision to perform emergency surgery must be made in a very short time. Acute abdomen in pregnancy remains one of the most challenging diagnostic and therapeutic dilemmas today.

Objective: To determine the most common causes of acute abdominal condition in pregnancy.

Patient and Methods: This is a prospective study performed in AL. Zahraa and AL. Sader Teaching Hospital of AL. Najef city during the period from 1st of December 2012 till 1st of December 2013. The study included 120 pregnant females in different trimesters who presented to the emergency department with acute abdominal pain. Patient age varies from 10- 50 years, we divided these cases into obstetric and non-obstetric causes according to the result of clinical examination and laboratory investigation, abdominal and pelvic ultrasound.

Result: There is a variable difference between the causes of acute abdomen in pregnancy according to age group and trimesters.

Conclusion: Our study shows that a major cause of acute abdomen in pregnancy is ectopic pregnancy then acute appendicitis.

Keywords: Appendicitis, Acute, Abdomen

Introduction

Acute abdomen is a general term for acute abdominal diseases accompanied primarily by sudden abdominal pain for which a decision to perform emergency surgery must be made in a very short time [1]. The incidence of acute abdomen during pregnancy is 1 in 500–635 pregnancies [2].

Tocolytics are thought to calm the uterus from the insult of acute abdomen during conservative management or surgery, but this is controversial [3, 4]. Abdominal pain is one of the most common reasons for visits to the emergency room. Although for the majority of patients, symptoms are benign and self-limited, a subset will be diagnosed with an “acute abdomen as a result of serious intra-abdominal pathology necessitating emergency intervention” [5]. 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 [5]. Causes of acute abdomen in pregnancy include ectopic pregnancy, peduncular torsion of an ovarian cyst, ovarian bleeding, and pelvic inflammation [6]. However, it may also be caused by such illnesses as acute appendicitis, ileus, and cholecystitis.

[7] 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 [8]. Surgeons are most frequently confronted with pregnant women suffering from acute abdominal pain due to appendicitis [8]

Although a surgical procedure during pregnancy carries the risk of fetal loss, 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 [9]. In acute abdomen in pregnancy, some have advocated aggressive early surgical intervention [10, 11]. While others have adopted an initial trial of conservative treatment before resorting to surgery in case of failure [4, 12]. Acute abdomen in pregnancy remains one of the most challenging diagnostic and therapeutic dilemmas today [13]. Delay in surgical intervention, together with the operative maneuvers, are the main causes of

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the poor outcome [3, 14]. Fear of the complication of a negative laparotomy in a pregnant makes surgeons hesitant to interfere surgically, leading them to await clear cut symptoms and signs of acute abdomen in [14, 15]. In pregnancy, these symptoms and signs are blunted by the anatomical displacement of the pregnant uterus [16]. And the masking effect of the physiological symptoms of normal pregnancy, such as nausea, vomiting, mild abdominal pain and constipation [17, 18]. 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” [5]. Acute abdomen in pregnancy due to non-obstetric causes is accompanied by a high incidence of poor fetal outcome and maternal morbidity [19, 20]. 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 [21]. 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 [22].

Aim of study: To determine the most common causes of acute abdominal condition in pregnancy

Patient and method

This is a prospective study were performed in Al-Zahraa and Al-Sader teaching hospital of Al-Najef city during the period from 1st of December 2012 till 1st December 2013. The study included 120 Pregnant female in different trimester whose presented to the emergency department with acute abdominal pain of obstetric and non-obstetric causes which included 69 obstetric case and 51 no-obstetric case Patient age vary from 10- 50 years 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. 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.

Examination of the abdomen should comprise four sequential

Components: 1. Inspection 2. Auscultation 3. percussion and palpation.

The exam should include all areas of the abdomen, flanks and groins. All patient send for CBP, blood urea, serum creatinine LFT,GUE. And all patient 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.

Result: This study shows that total number of obstetric cause was sixty nine [69] and non-obstetric cause was fifty one [51].The most common obstetric cause was ectopic pregnancy, and the non –obstetric cause was acute appendicitis In our study 120 patients enrolled. We divided the causes (obstetric and non-obstetric) according to the patient’s age as shown in table -1 The age group (10-20 years); first show ectopic pregnancy which revealed about thirteen patient (10.83%), followed by abruption placenta which was revealed about three patient (2.5%).While age group (21-30 years); ectopic pregnancy was the first cause which revealed about twenty one patient (17.5%) followed by complicate ovarian cyst which reported about twelve patient (10%) followed by abruption placenta which revealed about seven patient (5.83%), then followed by hellp syndrome which revealed about tow patient (, 1.66%).Our study showed in the age group (31-40 years) that the first cause of acute abdomen was acute appendicitis which revealed about twenty tow patient (18.33%), followed by acute cholecystitis which revealed about seventeen patient (14.16%), followed by ectopic pregnancy which revealed about eleven patient (9.16%), followed by abruption placenta which reported about seven patient (5.83%).While age group (41-50 years) revealed that the most common cause was abruption placenta which revealed about tow patient (1.66%), followed by ectopic pregnancy which revealed about one patient, (0.83%).The age group (21-30 years) revealed the high incidence of acute abdomen including obstetric and non-obstetric causes Which revealed about thirteen patient (25.5%)In our study report that the ectopic pregnancy was the most common cause of acute abdomen for all age group enrolled about forty six patient, (38.33%) were referred to the emergency unit for acute abdomen. 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 six patient (38.33%) fallowed by acute appendicitis which reported about seventeen patient, (17.16%) fallowed by acute cholecystitis which revealed about fifteen patient (12.5%) then twisted ovarian cyst which reported about seven patient (5.83). In the second trimester showed that acute appendicitis and twisted ovarian cyst were the first cause were revealed about fife patient, (4.16%) fallowed by abruptio placenta which revealed about three patient (2.5%) then acute cholecystitis which revealed about tow patient (1,66%)In the third trimester showed that abruption placenta was the First cause of acute abdomen which revealed about sixteen patient (13.33%)Then hellp syndrome which revealed about fore patient (3.33%). This study showed that ectopic pregnancy was the first cause of acute abdomen in all trimesters which revealed about forty-six patient (38.33%). A current study showed that the incidence of acute abdomen reached its highest level in the first trimester were revealed about eighty fife patients (70.84%).

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

Age group (years)	Ectopic pregnancy	No.of Abruptio placenta	Hellp syndrome	Acute Append.	Acute Cholecyct.	Twisted ovarian cyst	Total NO.
10-20	13(10.83%)	3(2.5%)	0(0%)	0(0%)	0(0%)	0(0%)	16(13.33%)
21-30	21(17.5%)	7(5.83%)	2(1.66%)	0(0%)	0(0%)	12(10%)	30(25%)
31-40	11(9.16%)	7(5.83%)	2(1.66%)	22(18.33%)	17(14.16%)	0(0%)	20(16.66%)
41-50	1(0.83%)	2(1.66%)	0(0%)	0(0%)	0(0%)	0(0%)	3(2.5%)
Total	46(38.33%)	19(15.83%)	4(3.33%)	22(18.33%)	17(14.16%)	12(10%)	120

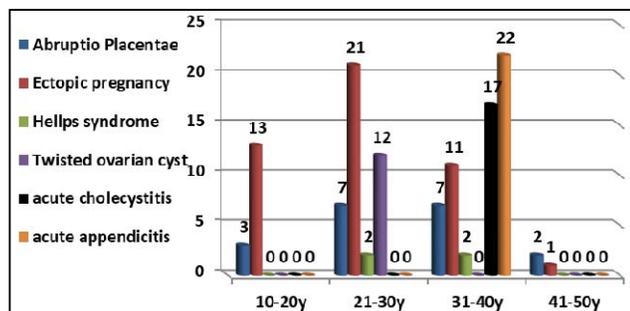


Fig 1: age distribution of patient with obstetrical and non-obstetrical causes according to age group

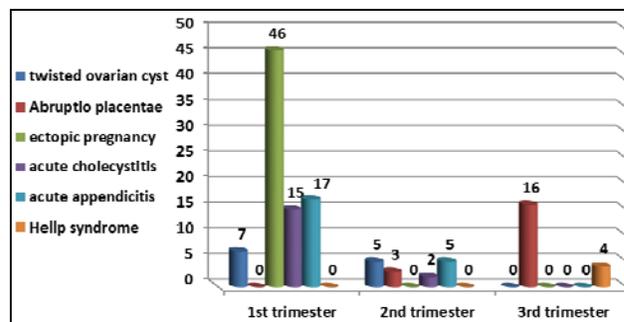


Fig 2: distribution of obstetric and non-obstetric causes according to the trimesters.

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

Total	Ectopic pregnancy	Abruptio placenta	Hellp Syndrome.	Acute appendicitis.	Acute cholecystitis.	Twisted ovarian cyst	Total
1 st T.	46(38.33%)	0(0%)	0(0%)	17(14.16%)	15(12.5%)	7(5.83%)	85(70.83%)
2 nd T.	0(0%)	3(2.5)	0(0%)	5(4.16%)	2(1.66%)	5(4.16%)	15(12.5%)
3 rd T.	0(0%)	16(13.33)	4(3.33%)	0(0%)	0(0%)	0(0%)	20(16.66%)
Total	46(38.33%)	19(15.83%)	4(3.33%)	22(18.33%)	17(14.16%)	12(10%)	120

Discussion: 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 [4]. Sonography remains the first line of imaging in pregnant patients presenting with acute abdomen. Patient triage or additional imaging may be obtained on the basis of the US findings [7]. 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 [8]. 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 [23, 24]. Rapid-sequence MR imaging is preferable to conventional MR imaging because of the briefer exposure [25]. Suggests that MR imaging is an excellent modality for diagnosis of acute appendicitis and exclusion of diseases requiring surgical or interventional treatment [10]. They found that US results were positive only in 36% of patients with proved acute appendicitis. MR results were positive in all patients with acute appendicitis [11]. In our study, CT was not used. US findings were consistent with surgical findings in only 55% of patients with acute abdomen. MR was used in patients with negative or suspicious US findings, and it was successful in putting the correct diagnosis in 83.3%. Therefore, in case of pelvic disease in particular concerning the ovaries and the uterus

as well as fetal imaging, Laparoscopy appears to be well tolerated in pregnancy, but larger multicenter prospective studies are required to make better recommendations concerning its use [3]. 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 [12]. In conclusion, surgical emergencies may be difficult to recognize in pregnant patients whose normal physiologic state is altered by pregnancy. Early suspicion and serial examinations in pregnancy result in appropriate interventions for intra-abdominal pathologies causing acute abdomen such as appendicitis and bowel obstruction. The investigation of acute abdominal pain in pregnancy is challenging. The use of US may be limited due to the patient's change in body habitus and CT is not desirable due to fetal irradiation. MR has thus become increasingly popular in the evaluation of such patients from this study showed that the incidence of ectopic pregnancy was (38.33%). while the incidence in other studies was (10%) This study shows that the incidence of acute appendicitis was (14.16%), while the incidence in other studies (30%). While the incidence of acute appendicitis in this study at age group 21 -40y was (14.16%) and in other study at age group 20-35y was (70.1) The incidence of twisted ovarian cyst in this study was (5,83%) while in other studies was(5%)while the incidence of same condition at age group 21-30y in current study was (10%) and in other studies at the same age group was (3.6%) for 20 patient. The incidence factor of acute cholecystitis in current study at age group 31-40y was (14.16%) and at same group in other studies (3.6%) Other study shows that the risk factor for ectopic pregnancy include prior ectopic pregnancy [26, 27], advanced maternal age [28]. And placental abruption occur in about 1of 80 deliveries [29] risk factor include advanced maternal age an incidence similar to that

of acute appendicitis^[30]. About one quarter of adnexal torsion occur during pregnancy^[31], because of the greater laxity of the tissue supporting the ovaries and oviducts during pregnancy [32]. Parenteral neostigmine administration is contraindicated during pregnancy^[33] Acute pancreatitis has been reported in 0.1% to 1% of pregnancies, most commonly occurring during the third trimester and postpartum^[34, 35] Pregnancy promotes bile lithogenicity and sludge formation because estrogen increases cholesterol synthesis and progesterone impairs gallbladder motility^[36, 37]. In a large ultrasound study in Chile, 12% of had cholelithiasis versus 1.3% of non-pregnant controls^[38]. An Italian study reported an even higher incidence of cholelithiasis^[39]. 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. 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^[27, 40]. Appendicitis may occur at any time during pregnancy but is slightly more likely during the second trimester^[27, 41] other study shows that Penicillin (including ampicillin/sulbactam), Cephalosporins, Clindamycin, and Gentamicin are considered safe during pregnancy^[42]. Quinolones are not recommended because safer alternatives are available^[43]. Clindamycin is preferred to Metronidazole for anaerobic coverage, even though both are category B drugs in pregnancy^[44] Symptomatic peptic ulcer disease (PUD) is uncommon during pregnancy and antecedent PUD often improves during pregnancy^[45, 46]. Antacids are generally safe for the fetus, but those containing magnesium should be avoided near delivery because they can retard labor and possibly cause neurologic depression in the newborn^[47], and those containing sodium bicarbonate should be avoided throughout pregnancy because they may cause fluid overload or metabolic alkalosis^[48]. Acute intestinal obstruction is the second most common non-obstetric abdominal emergency obstruction most commonly occurs in the third trimester because of the mechanical effects of

Conclusion: The most common cause of acute abdomen in pregnancy is ectopic pregnancy followed by acute appendicitis.

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