EARLY APPENDECTOMY DURING PREGNANCY

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ABSTRACT

Background: Appendectomy for presumed acute appendicitis is the most common surgical emergency during pregnancy, acute appendicitis occurs at the same rate in pregnant and non pregnant women, but pregnant women have a higher rate of perforation.

Patients &methods: This prospective study done 42 pregnant women between age 20 to 41 years all of them were complained from signs and symptoms of acute appendicitis arrived ER of Al Hussain teaching hospital in AL Nassyria during period 2010 either came directly or referred from gynecologist ,they underwent appendectomy early after diagnosis .

Results: Most of patients succeeded pregnancy 38 patients (90.4%) { in spite of 3 patient (7%) have threatened abortion anther 3 patients have preterm uterine contraction but they continue of pregnancy successively},only 4 patient (9.5%) end with abortion.Most of women [21patients (50%)] complained from acute appendicitis during second trimester .Most of patients who did not delay operation till 48 hours can pass pregnancy successfly with some problems , while who delayed more liable to abortion [4 of 10 patient (40%)] .

Aim: reduce fetal loss after appendectomy during pregnancy. **Conclusion**: we advices early operation in pregnancy with out delay, no place for conservative management in acute appendicitis .

KEYWORDS: acute appendicitis, pregnancy, appendectomy

INTRODUCTION:

Appendectomy for presumed acute appendicitis is the most common surgical emergency during pregnancy(1).Acute appendicitis occurs at the same rate in pregnant and nonpregnant women, but pregnant women have a higher rate of perforation (2,3,4,5) . The incidence is approximately 1 in 766 births, acute appendicitis can occur at any time during pregnancy with perhaps a slight increase in frequency during the second trimester(1,6,7).The overall negative appendectomy rate during pregnancy is approximately 25% and appears to be higher than the rate seen in nonpregnant women(1,8). A higher rate of negative appendectomy is seen in the second trimester, and the lowest rate is in the third trimester. The diversity of clinical presentations and the difficulty in making the diagnosis of acute appendicitis in pregnant women is well established. This is particularly true in the late second trimester and the third trimester :-

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1- Many abdominal symptoms may be considered pregnancy related.

2- During pregnancy there are anatomic changes in the appendix(the appendix is displaced by the gravid uterus). (9)

3- Increased abdominal laxity that may further complicate clinical evaluation. There is no association between appendectomy and subsequent fertility. Acute appendicitis in pregnancy should be suspected when a pregnant woman complains of abdominal pain of new onset. The most consistent symptom encountered in acute appendicitis during pregnancy is pain in the right side of the abdomen. 74 % of patients report pain located in the right lower abdominal quadrant, with no difference between early and late pregnancy. Only 57% of patients present with the classic history of diffuse periumbilical pain migrating to the right lower quadrant (8).The differential diagnosis of appendicitis includes not only the conditions possible in nonpregnant women, but also certain conditions specific to pregnancy, ectopic pregnancy, chorioamnionitis, preterm labor, placental abruption, and round ligament pain (9). Appendicitis may be easily mistaken for pyelonephritis or cholecystitis (10). Laboratory evaluation is not helpful in establishing the diagnosis of acute appendicitis during pregnancy. The physiologic leukocytosis of pregnancy has been defined as high as 16,000 cells/mm^3. In one series only 38% of patients with appendicitis had a white blood cell count of >16,000 cells/mm^3(1). When the diagnosis is in doubt, abdominal ultrasound may be beneficial. Ultrasound is accurate in pregnancy(10) and is a useful first study because it has no known adverse fetal effects (11). Another option is magnetic resonance imaging MRI, which has no known deleterious effects on the fetus. The American College of Radiology recommends the use of nonionizing radiation techniques for front-line imaging in pregnant women(12). The overall incidence of fetal loss after appendectomy is 4% and the risk of early delivery is 7%. Rates of fetal loss are considerably higher in women with complex appendicitis than in those with a negative appendectomy and with simple appendicitis. It is important to note that a negative appendectomy is not a benign procedure. Removing a normal appendix is associated with a 4% risk of fetal loss and 10% risk of early delivery. Maternal mortality after appendectomy is extremely rare (0.03%). Because the incidence of ruptured appendix is similar in pregnant and non pregnant women and because maternal mortality is so low, it appears that the greatest opportunity to improve fetal outcomes is by improving diagnostic accuracy and reducing the rate of negative appendectomy (1,13).

PATIENTS & METHODS:

Atotal of 42 pregnant women in different gestational age , who were diagnosed with acute appendicitis confirmed by history, clinical examination ,simple available investigations like ultrasound , WBC count &GUE and operated upon in Al Hssain teaching hospital in Al Nassyria between 1st January to 31st December 2010 as early as possible no waste of time for conservative management .We follow the fate of pregnancy (either continue safely without complaint , or some complaints like threatened abortion or sever pain due to premature contraction but pregnancy continue or end of pregnancy with abortion and preterm labor) and compare them in first , second or third trimester

, then compared them according interval between symptoms onset and operation,most of patients came hospital early so we do operation within 24 hours , but some of patients came late to hospital due to either coming from rural areas or some delay operation because her gynecologist suspect this complaint due to pregnancy not to appendicitis and others hesitate to do operation so they came late after 48 or 72 hours or more .

AIM OF STUDY:

Any operation in pregnant woman may induce trauma to both mother and baby so the aim of this study :-

1- To know the appropriate time of operation .
2- To reduce fetal loss(abortion or premature labor)after appendectomy during pregnancy.

RESULTS:

42 pregnant women between age 20 – 41 years all of them underwent appendectomy early after arrive the hospital most of patients succeeded pregnancy 38 patients (90.4%) [in spite of 3 patient (7%) threatened abortion , 3patients (7%) preterm uterine contraction ,but continued their pregnancy successively]only 4 patient (9.5%) ended with abortion (table 1) ss

Most of women complained from appendicitis during second trimester about 21 patients (50%) only one of them (4.7%) ended with abortion and another one with threatened abortion and , while 16 patient (38%) in the first trimester 3 of them(18.7%) ended with abortion and 2 patients (12.5%) threatened abortion,in the third trimester there are 5 patients (11.9%) 2 of them (40%) complain from uterine contraction (table 2)

About 25 women came from urban so they came hospital early, while 20 women from rural areas , so some of them came to hospital after 48 - 72 h after onset of signs and symptoms , in 26 patients operations were done within 24 hours all of them succeeded pregnancy except one patent(3.8%) had threatened abortion but also succeeded, in 6 patients surgery were done within 48 hours one of them (16.6%) only complained from threatened abortion, another one with uterine contraction but pregnancy continued safely .

While 10 patients operation was done within or after 72 hours with no appendicular mass or perforation (according ultrasound examination report, but a lot of adhesions during surgery were founded) 4 of them (40%) ended with abortion , one (10%) threatened abortion another one uterine contraction (table 3) (fiSgure1).

Discussion:

We take this matter appendicitis during pregnancy because the appendicitis is the most common non obstetric emergencyrequiring surgeryduring pregnancy.(1 , 2) this is first , and also the diagnosis of appendicitis is complicated by the physiologic and anatomic changes that occur during pregnancy (2) . We study 42 pregnant patients between age 20 to 41 years they complained from signs and symptoms of acute appendicitis they arrived ER of Al Hussain teaching hospital In Al Nassyria during period 2010 , acute appendicitis can occur at any time during gestation but is most common in the first and second trimester (14)

Recent studies have shown a preponderance in the second trimester, with approximately 30% of cases occurring during the first trimester, 45% during the second trimester and 25% during the third trimester, labor, or purperium (15) but in our study most of women complained from appendicitis during second trimester about 21 patients (50%) while 16 patient (38%) in the first trimester and 5 patients (11.9%) during third trimester.One study found an inverse relationship between pregnancy and appendicitis, especially in the third trimester, suggesting that pregnancy has a protective effect. (16), we found 2of 5 patient in third trimester (40%) complain from sever abdominal pain due to uterine contraction but the pregnancy continue safely(table 2).The mortality of appendicitis during pregnancy is the mortality of delay (14) there is some pregnant women who complained from acute appendicitis came to hospital late because of delay diagnosis and so delay referring .The pregnant patient with appendicitis presents unique challenges to both the surgeon and gynaecologist.

--Firstly , the diagnosis of pregnancy needs confirmation at the time of presentation.

--Secondly, the anaemia and physiological changes that normally occur during pregnancy alter the physical findings and laboratory values that are often used for diagnosis of appendicitis.

--Thirdly, cases of appendicitis that occur during pregnancy can produce significant morbidity and mortality if not promptly identified and treated.

-- Fourthly, the treating surgeon has limitations in the use of certain diagnostic procedures because of possible teratogenicity like intravenous pyelography and X-ray abdomen.

--Finally the surgeon is treating two patients simultaneously the mother and the fetus and must be aware of the potential effects of treatment on both patients at all times (17). In this study we found 10 patients operations were done within or after 72 hours with no appendicular mass or perforation (according ultrasound examination report, but a lot of adhesions were founded during surgery) 4 of them (40%) ended with abortion , one (10%) threatened abortion another one uterine contraction (table 3) (figure1) in other hand all abortion (4 Patients) occur in delayed cases especially in first trimester. We compare with other study in Peking University Third Hospital, China they found longer interval between onset of symptoms and surgery was associated with appendix perforation than with no appendix perforation .There was a significant difference in the rate of preterm labor (5.1% vs 1.3%) and the rate of fetal mortality (25% vs 1.7%) between patients with and without a perforated appendix. (18) .Another study was done in Dicle University Hospital, Diyarbakir, Turkey show a significant difference between perforated and non-perforated patients about the rate of complications (52% vs. 17%). (19) .Fortunately in our study no much delay in operation till perforation or mass formation , only adhesion with some suppuration done , any how this delay causes abortion in 4 patients specially in first trimester.

CONCLUSIONS:

The interval between onset of symptoms in acute appendicitis and operation play important role to determine fate of the

S pregnancy , not waste of time to conservative management or sophisticated investigations for definite diagnosis so we advice appendecectomy in pregnant woman as early as possible without delay , the delay mean more adhesion, may be perforated or mass formation which make operation more difficult may end pregnancy with abortion or other complications

Tables

Total Patients 42	Abortion 4 (9.5%)	Threatened.ab 3(7%)	Ut.contraction 3(7%)S

Table 1

	st trim	2nd trim	3rd trim
abortion	3 Pt (18.7%)	1 Pt (4.7%)	0
threatend abortion	2 Pt (12.5%)	1 Pt (4.7%)	0
uterine contraction	0	1 Pt (4.7%)	2 Pt (40%)
No sequels	11 Pt (68.7%)	18Pt (85.7%)	3 Pt (60%)
total	16 Pt	21 Pt	5 Pt

Table 2

	24h	48h	72h
total	26	6	10
abortion	0	0	4(40%)
threatened ab	1(3.8%)	1(33.3%)	1(10%)
ut contraction	0	1(33.3%)	2(20%)
no sequels	25(96%)	4(66.6%)	3(30%)

Table 3

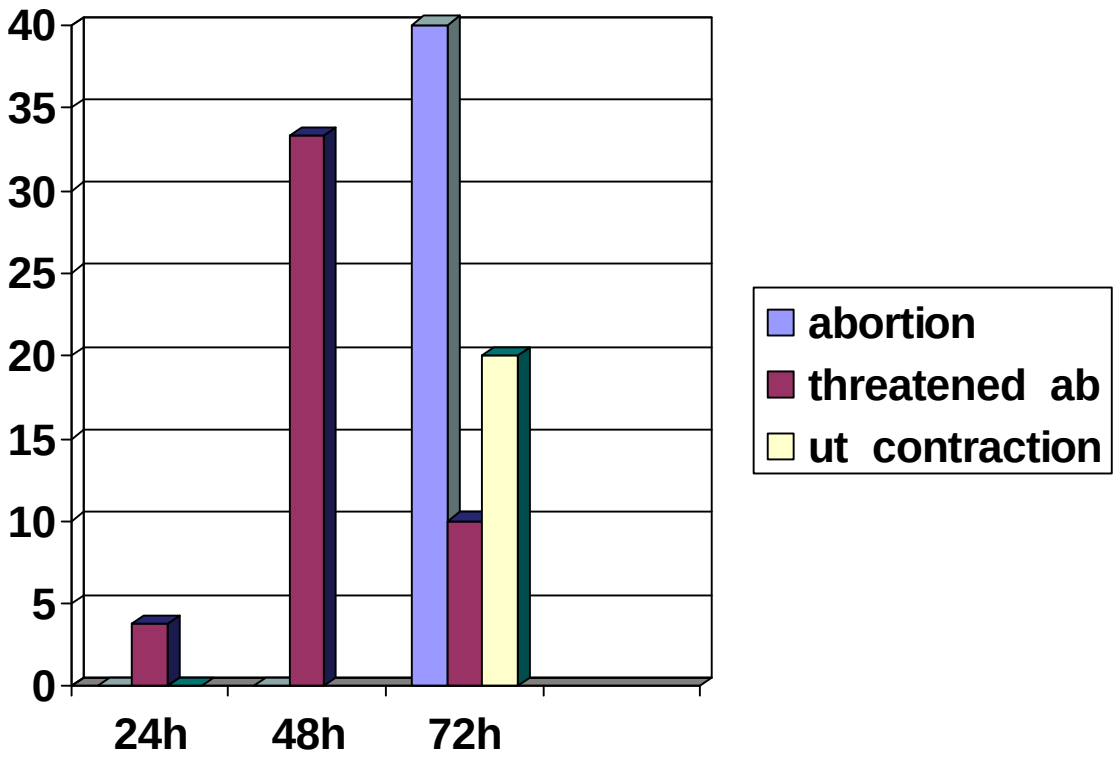

Figure 1

(percentage of patient who complained from pregnancy problems according to onset of symptoms)

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استئصال الزائده الدوديه المبكر عند الحوامل

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ألخلاصه

دراسه مستقبليه أجريت على ٤٢ من النساء الحوامل بفترات متباينة من الحمل تتراوح اعمارهن بين ٢٠ الى ٤٢ عاما دخلن طوارئ مستشفى الحسين التعليمي في الناصريه خلال عام ٢٠١٠ جميعهن أصبن بالتهاب الزائده الدوديه إثناء حملهن (الكثير منهن مرسلات من قبل طبيبات نسائيه) وقد تم تشخيصها سريريا مع مساعده بعض الفحوصات المتوفره ثم أجرينا عمليه استئصال الزائده الدودبه بعد وصولهن الطوارئ بفترة وجيزة فكانت النتائج كالاتي :-

١- كان معظم النساء ٣٨ أمراءه(٤،٩٠ %) قد أكملن حملهن بسلام بالرغم من ٣ نساء(٧%) أصبن بإجهاض مهدد و ٣ أخريات (٧%) بألم قوي بسبب تقلصات رحميه مبكرة) لكنهن أكملن حملهن بسلام فقط أربعه مريضات (٦،٩ %) انتهى حملهن بالإجهاض

٢-أكثر حالات الزائدة الدودية تحدث خلال الأشهر الثلاثة الوسطى٢١ مريضه ٥٠%

٣- وجد نا المريضات اللواتي يتأخرن بأجراء العملية ل ٧٢ ساعة او أكثر هن اكثر عرضه للاجهاض من غيرهن (٤ مريضات من اصل ١٠) او من مشاكل الحمل الأخرى مثل الإجهاض المهدد او التقلصات ألرحميه

لذا ننصح بأجراء عمليه الزائدة الدودية اثناء الحمل بعد تشخيصها سريريا وبعض الفحوصات المتوفرة بأقرب وقت ممكن لتفادي تلك المشاكل

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