Original Article

Acute Appendicitis

Fetomaternal Outcome of Pregnancies Complicated by Acute Appendicitis

1. Azad Ali Lashari 2. Kulsoom Bhatti 3. Tahmina Mahar 4. Rubina Hafeez

1. Asstt. Prof. of Surgery 2. Asstt. Prof. Obst. & Gynae 3 & 4. Senior Registrars, Obst. & Gynae, Ghulam Muhammad Mahar Medical College, Sukkur

ABSTRACT

Objective: To observe the frequency and Fetomaternal outcome of pregnancies with acute appendicitis.

Study Design: Prospective / observational study

Place and Duration of Study: This study was conducted in gynecology and surgical department of Ghulam Muhammad Mahar Medical College Teaching Hospital Khairpur Sindh from January 2010 to December 2012.

Materials and Methods: All pregnant ladies admitted in Gynae and surgical department with history of acute pain in abdomen and strong suspicious of acute appendicitis on the basis of history, clinical examination and ultrasound findings after exclusion of other gynecological and surgical causes of acute abdomen during pregnancy were included in the study for following variables: Presentation, duration of symptoms, operative findings and complications associated with disease and operative procedure were noted. Data was collected on pre-designed Performa and analyzed on SPSS version 15.

Results: During 3 year study period total 8700 Obstetric admission and cases with strong suspicious of acute appendicitis in pregnancy was 20 (0.22%), most women belongs to age between 18-40 years. More cases seen 2nd trimester 11(55%), duration of symptoms < 24 hours seen in 85% and >24 hours seen in 15% of cases. Abdominal pain was leading symptom present in 80% of cases while lower abdominal tenderness was leading sign seen in 90%. On surgery signs of acute appendicitis seen in 75%, normal looking appendix in 10%, while perforated appendix with moderate pus in peritoneal cavity seen in 15% of cases. One maternal death was seen in study population due to septicemia, most probably because of late presentation.

Conclusion: The evaluation of a pregnant woman presenting with acute abdominal pain warrants a careful workup due to the possible risks for the fetus and mother if appendix perforates.

Key Words: Pregnancy, acute appendicitis, perforation, maternal mortality.

INTRODUCTION

Acute appendicitis is the most common general surgical problem encountered during pregnancy.[1]

Suspected cases of acute appendicitis in pregnancy are considered surgical emergency due to the potentially devastating out come for both mother and unborn fetus if appendix perforates.[2] In non gynecological cause of acute abdomen the most common cause is acute appendicitis with an incidence of 1500-1700 pregnancies.[3] Of those women who are afflicted with acute appendicitis during pregnancy, the incidence by trimester is 32%, 42% and 26%.[4]

Pregnant women are less likely to have a classic presentation of appendicitis than non pregnant women. The most common symptom of appendicitis i.e. right lower quadrant pain, occurs close to MC Burney's point in the majority of pregnant women, regardless of the stage of pregnancy.[5]

The diagnosis is particularly challenging during pregnancy because of the relatively high prevalence of abdominal/gastrointestinal discomfort, anatomic changes related to the enlarged uterus, and the physiologic leukocytosis of pregnancy. Appendiceal rupture occur more frequently in the third trimester, possibly because these changes and reluctance to operate on pregnant women delay diagnosis and treatment.[6] Maternal mortality rate can reach 4% while fetal death can be seen in up to 43% of perforated appendix.[7] The definitive treatment for suspected acute appendicitis in pregnant patient is emergent appendisectomy, even if intra-operatively the appendix is grossly normal. Immediate surgical intervention with in the first 24 hours is warranted in any case of suspected or confirmed acute appendicitis in a pregnant woman to avoid perforation and resultant severe complications.[8]

The aim of this study was to observe the frequency and fetomaternal outcome of pregnancy with acute appendicitis.

MATERIALS AND METHODS

The present study was conducted combined in Gynae and Surgical department of Teaching Hospital Khairpur Sindh, during three year periods. Total number of 20 cases with strong suspicious of acute appendicitis in pregnancy were included in the study after exclusion of other gynecological, obstetrical and surgical causes of acute abdomen. In all cases a detailed history regarding gestational age, onset of abdominal pain, duration of symptoms were taken. A complete general physical and abdominal examination was performed. All base line investigations e.g.: complete blood picture, urine D/R, abdominal and pelvic ultrasound were performed and noted. Pre-operative antibiotics was started all cases.

All the patients were counseled about the disease and surgical procedure laparatomy.

The abdomen was opened through a right paramedian incision. In all cases appendix was removed regardless of its gross appearance was normal in two cases. In two cases the pregnancy was terminated concomitantly by caesarean section. These both cases presented with 4-5 days history of pain in abdomen in 3rd trimester and previous history of caesarean section. On operation moderate amount of frank pus was found in peritoneal cavity.

Progesterone was used in all patients whose pregnancy was continued. All the analysis was performed by using SPSS version 15.

RESULTS

Amongst the 20 cases of acute appendicitis during pregnancy, the age range of patients was 18-40 years and parity was 1-8 children. More cases seen in 2nd trimester 11(55%). The duration of symptom was <24 hours found in 85% of cases. (table: 1)

The main complaint of the patient was abdominal pain was seen in 16(80%) of cases, the pain generally beginning in the upper abdomen and shifting to the right lower quadrant associated with nausea and vomiting. Lower abdominal tenderness was present in 18(90%) of cases, only in 7(35%) of patients positive Psoas and Rovsing signs.(table: 1)

Table No.1: Demographic characteristics of study population N= 20

Parameters	No:	%age
Total Obstt: patients	8700	-
No: of appendicitis pt:	20	0.22%
Age of women	18-40 yrs	-
Gestational age(trimester wise) -1st trimester -2nd trimester -3rd trimester	 06 11 03	 30% 55% 15%
Duration of symptoms	17 (<24 hrs) 03 (>24 hrs)	85% 15%
Presenting symptoms		
-Abd: pain shifting to RLQ: -Rt lower quadrant pain only - Nausea and vomiting - Fever >100°F -Constipation -Lower abd: tenderness -Rebound tenderness -Positive Psoas & Rosing sign	16 04 15 14 13 18 05 07	80% 20% 75% 70% 65% 90% 25% 35%

All women underwent laparatomy for appendisectomy. During operation signs of acute appendicitis was seen in 15(75%) cases, 3(15%) found perforated appendix with moderate frank pus collected in peritoneal cavity and only in 2(10%) cases appendix looks normal. (table: 2)

Table No. 2: Operative findings N=20

Finding	Number	%age
-Acute appendicitis (red, inflamed appendix with minimal Fluid present in lower abdomen)	15	75%
-Perforated appendix with moderate Pus in peritoneal cavity	03	15%
-Normal looking appendix	02	10%

Appendix was removed in all cases regardless its normal appearance. In two cases concomitantly caesarean section was performed due to presentation of patients in 3rd trimester, late presentation, perforated appendix and previous baby was delivered by abdominal route.

The seriousness of appendicitis in pregnancy is reflected in both maternal and fetal outcome, and can be directly related to the rapidity with the therapeutic regimen is carried out. The patients who were operated as early as possible after admission to the hospital had few post-operative complications, as compared with those who went longer before operation, morbidity including fever, ileus and wound infection as twice as common and they also face prolonged hospital stay.

In patients whose appendix was removed during first trimester, one had miscarriage occurred during hospital stay period and remaining delivered of living baby at term. Fourteen of 20 patients operated during the 2nd and 3rd trimester 2 had premature deliveries occurred within the 4-5th post-operative days and who died in the neonatal period and thus must be considered to be related to the appendicitis and the operative procedure in the mother (table: 3). This all above happened in those patients who presented late and also her operation was occurred late after admission in the hospital.

Table No. 3: Fetomaternal outcome N=20

Variables	Number	%age
Fetal outcome -Miscarriage -Preterm delivery -Term birth	 01 02 17	 05% 10% 85%
Maternal outcome -Morbidity(wound infection) -Prolong hosp: stay(8-10)days -Maternal death	 05 12 01	 25% 60% 05%

There was one maternal death seen in study population. The patient of 35 weeks pregnant admitted the hospital after 4 days of abdominal pain. The uterus was found irritable, preterm labour, abruption placentae and acute appendicitis was provisional diagnosis. Twenty four hours after admission a diagnosis of ruptured appendix

was made and laparatomy was done, wide spread peritonitis resulted from ruptured supporative appendicitis. She delivered still born fetus on 3rd post-operative day and died on 4th post-operative day due to septicemia.

DISCUSSION

Early surgical intervention has shown to be vital in minimizing both maternal and fetal morbidity and mortality.

The incidence of 0.2% in our study also correlates with other studies where incidence of appendicitis in pregnancy is 0.1 to 0.17%.[9]

Burwell [10] found it three times more common in the first trimester, but in our study more cases seen in 2nd trimester which consistent with study by Tracey.[11] The classical symptoms of pain in abdomen shifting to the right lower quadrant , accompanied by nausea and vomiting was present in 80% of cases.

The risk of delay in diagnosis is associated with a greater risk of complications such as perforation, infection, preterm labour and risk of fetal and maternal loss.[12]

Maternal mortality has been reported from none to 2%.[8, 11] An un-ruptured appendix carries a fetal loss of 1.5% to 9% while this rate increases up to 36% with perforation.[13] fetal loss rate 15% was seen in this study. The risk of premature delivery is the greatest during the first week after surgery as seen in our study. However, maternal mortality is very low and if occur it is directly related with delay in diagnosis and intervention.

CONCLUSION

The accurate diagnosis of appendicitis during pregnancy requires a high level of suspicious and clinical skills, and not merely relying on the classic signs and diagnostic testing. Early surgical intervention is essential in pregnancy with acute appendicitis.

Suspected cases of this condition require serial physical examination as well as general surgeon and Obstetric consultation, since they are most qualified to evaluate all aspects of gravid patient and maternal physiology.

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Address for Corresponding Author:
Dr. Kulsoom Bhatti
Assistant Professor of Obstetrics & Gynaecology,
Ghulam Muhammad Mahar Medical College Teaching Hospital Khairpur Sindh
Cell #: 03083234318
Email: bhattikulsoom88@yahoo.com