

## Acute Abdomen in Pregnancy; Our Experience

Dr Anju kumari<sup>1</sup>, Dr. Niranjan kumar<sup>2</sup>, Dr Arvind Kumar<sup>3</sup>,  
Dr Meghraj kundan<sup>4</sup>

<sup>1</sup>Senior resident, Dept of Obstetrics & Gynaecology, V.M.M.C & Safdarjung Hospital, New Delhi -49, <sup>2,3</sup>Senior resident, Dept of General Surgery, V.M.M.C & Safdarjung Hospital, New Delhi -49, <sup>4</sup>Assistant Professor, Dept of General Surgery, V.M.M.C & Safdarjung Hospital, New Delhi -49

<sup>4</sup>Corrospoding Author - Dr Meghraj Kundan, Assistant Professor, Dept of General Surgery, V.M.M.C & Safdarjung Hospital, New Delhi -49, ,  
Corresponding Author: Dr Anju kumara

**Abstract:** Acute abdomen in pregnancy is a condition which affects both mother and fetus. It's clinical presentation may vary from normal. Diagnosis and management of this is very challenging. Delayed diagnosis may lead to adverse outcome for both mother and fetus. We are discussing our experince of management of acute abdomen in pregnancy and also try to review the different condition causing this.

**Keywords:** Preganancy, Acute abdomen, Acute appendicitis, Uterine rupture, Ectopic pregnancy

Date of Submission: 13-09-2019

Date of Acceptance: 01-10-2019

### I. Introduction

Acute abdomen defined as acute intra abdominal condition having pain, tenderness and muscular rigidity, for which emergency surgery should be considered<sup>1</sup>. Acute abdomen in pregnancy presents a unique diagnostic and therapeutic challenges due to wide range of cause and varied spectrum of clinical presentation. Acute abdomen in preganancy may be due to obstetrics as well as non obsterics causes. About 0.5% to 2 % of all pregnant women necessitate surgery for non obsterics acute abdomen.<sup>2,3</sup>

The diagnosis of acute abdomen in pregnancy is challenging due to both anatomical and physiological changes occuring in pregnancy and also restricted use of radiological diagnostic modalities like X- ray and CECT abdomen. Clinical examination of pregnant patients also not so easy, so clinical intpretation also becomes difficult.

Systemic approach is essential for an accurate and early diagnosis of potentially life threatening condition for better treatment of both mother and fetus.

Causes of acute abdomen in pregnancy may be

1. Non Obstetrics

2. Obstetrics

3. Extra abdominal pain

1. Non obstetric cause may be due to following

Surgical

Acute appendicitis, Intestinal perforation, Gastric perforation, Intestinal obstruction, Cholecystitis, Acute pancreatitis, Biliary colic, Trauma, Urolithiasis

Medical

Gastroenteritis, Deep veinous thrombosis, Cystitis, Pyelonephritis, Hepatitis

2. Obstetrics causes are followings

Early pregnancy

Abortion, Ectopic pregnancy, Molar pregnancy, Complicated ovarian cyst, Degenration of fibroid, Round ligament pain

Late pregnancy

Abruptio placenta, Pre term labour, Labour pains, Rupture uterus, Polyhydraminos, Uterine torsion, Eclampsia and preeclampsia, HELLP syndrome, Rupture rectus sheath, Abdominal pregnancy, Fibroid degenration

3. Extra abdominal etiology like cardiac pain, pleuritic pain, non specific abdominal pain

Here we are sharing our experience in managing acute abdomen in pregnancy.

Case 1

A 26 year old female presented with right lower abdomen pain with fever and vomitting from two days. She was primaegravida of 10 week gestation period. She had no significant past history. She was conscious, well oriented to time place and person. Her pulse rate was 98/ min and B.P.-118/79. She had

tenderness over rt.lower quadrant and local guarding and rigidity was present, She was vitally stable. Her blood investigation was within normal limit except leucocytosis ( WBC - 14000). Her ultrasound abdomen was suggestive of acute appendicitis with single live foetus in uterine cavity (Photograph 2). Patients was taken for surgery and emergency open appendicectomy was done. Intraoperative appendix was thickened and inflamed, which had features of acute appendicitis in histopathological examination (Photograph 1) . Patient was discharged with normal fetus post operatively.



**Photograph 1** - showing inflamed appendicis in pregnant women



**Photo 2** showing fetus in utero in patient of acute appendicitis in sonography.

### Case 2

A 24 year old female presented with whole abdomen pain with obstipation from two days . She was primaegravida of 17 week gestation period. She had history of fever last month. She was conscious,well oriented to time place and person. Her pulse rate was 108/ min and B.P.-108/79. She had generalised tenderness over whole abdomen and guarding and rigidity was present, She was vitally stable. Fundus of uterus

was palpable midway between umbilicus and pubic symphysis. Her blood investigation were as Hb-12.6, TLC-5,640, Platelet-2.6 Lakh, INR-1.3, ECG-WNL. USG whole abdomen was suggestive of gross free fluid in peritoneal cavity with single alive foetus with 17 wk gestational period in the uterine cavity. Patient was taken for emergency laparotomy. Per operative there was ileal perforation approximately of size 0.5 cm in diameter and loop ileostomy was made under anesthesia. Patient was discharged ( Photograph 3).



**Photograph 3** – showing ileal perforation in pregnant patient

## II. Discussion

**Non obstetric cause-** We will discuss following-

### **Acute Appendicitis**

Hancock reported acute appendicitis complicating pregnancy first in 1848<sup>4</sup>. Approximately 0.04 % to 0.2% incidence of acute appendicitis in pregnant female is in the literature.<sup>5</sup> Acute appendicitis is the most common non obstetric surgical emergency during pregnancy followed by cholecystitis , pancreatitis and intestinal obstruction.<sup>5,6</sup> Acute appendicitis is the most common cause for non obstetric surgical intervention performed during pregnancy, which is approximately 25% of non obstetric surgical intervention.<sup>7</sup> Acute appendicitis can present in all trimester, most common in second trimester, while appendicular perforation most frequent in third trimester. There is vague clinical presentation. Patients presents as periumbilical pain, which shifts to right lower quadrant. There will be maximum tenderness at Mc Burney's point. Alder's sign and Bryan's sign may help in diagnosing acute appendicitis during pregnancy. Ultrasonography has sensitivity of 67 – 100% and specificity of 83 – 96% for acute appendicitis in pregnancy.<sup>8</sup> Contrast enhanced CT Scan has more sensitivity and specificity, but there is inherent risk of radiation exposure. MRI has been recommended second line of imaging in case of inconclusive USG for suspected appendicitis in pregnancy.<sup>9</sup> MRI is most useful in detecting normal appendix. Management depends upon clinical presentation and investigation. Treatment is surgery. Delay in diagnosis has increased risk of appendicular perforation, peritonitis and septicemia, which may cause miscarriage , preterm labor and intrauterine death. 3 – 5 % fetal loss in unruptured appendix and 20 – 25 % fetal loss in perforated appendix and maternal mortality approx. 4%<sup>22</sup>. Some study showed that antibiotic may be first line treatment and not inferior than surgery.<sup>10</sup> Since significant fetal loss risk due to delayed diagnosis, early surgical intervention should be done. 35% risk of negative appendectomy rate in this, it is still justified.<sup>11</sup> Traditionally open appendicetomy was the procedure of choice in pregnancy.<sup>12</sup> It is a dictum that only appendicitis should be managed and pregnancy should not be disturbed.

### **Calculus cholecystitis**

It is second most common cause of surgical intervention during pregnancy. It present with pain at right hypochondrium or epigastrium, bloating, nausea.<sup>13</sup> Ultrasound is investigation of choice with a sensitivity of > 95%.<sup>14</sup> There is paucity of data regarding management of cholecystitis. Non operative management include antibiotics like cephalosporin and clindamucin and pain management. NSAID should be used carefully after 32 weeks due to risk of developing oligohydraminos and ductus arteriosus narrowing. Traditionally definite surgery is generally not preferred in uncomplicated cases. Elective cholecystectomy can be done post partum.<sup>15</sup>

### **Acute pancreatitis**

It is rare in pregnancy and mostly occurred in third trimester.<sup>16</sup> Most frequent cause of pancreatitis in pregnancy is gall bladder stone and congenital or acquired hypertriglyceridemia. Clinical presentation is similar as non pregnant female. USG is done. CT scan is rarely done. Management is usually conservative with adequate bowel rest, nasogastric aspiration, proper hydration, electrolyte correction and analgesic<sup>17</sup>.

#### **Bowel obstruction and perforation**

It is extremely rare in pregnancy. Adhesion is most common cause for intestinal obstruction. It occurs mainly due to previous abdominal surgery including cesarean section. Adhesive obstruction generally occurred in last trimester. Incidence are 6%, 28% , 45% and 21% during 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and perperium. Rest causes are volvulus, intussusceptions, hernia.<sup>18</sup> It presents as features of obstruction like nausea, vomiting, increased bowel sounds. Plain abdominal X - ray can be done. CECT and MRI abdomen can be used. Usually non operative management is done for adhesive intestinal obstruction. Emergency exploratory laparotomy should be done in failed conservative treatment<sup>17</sup>.

Intestinal perforation is also very rare. We had managed one case of intestinal perforation. Patients usually present with signs of peritonitis. Good ultrasound abdomen may suggest diagnosis. Plain X ray abdomen can be done. CECT and MRI abdomen can be used. Management involves resuscitation followed by emergency laparotomy. Depending upon patient condition primary repair of perforation or temporary diversion stoma may be done.

### **Urinary stone**

It is not very common. Patients may present as severe colicky flank pain, nausea and vomiting. USG of abdomen may suggest diagnosis. Single shot intravenous pyelogram can be done in suspicious cases. Generally patient is treated conservatively. Spontaneous passage of obstructing calculi occure in 85% patients<sup>17</sup>.

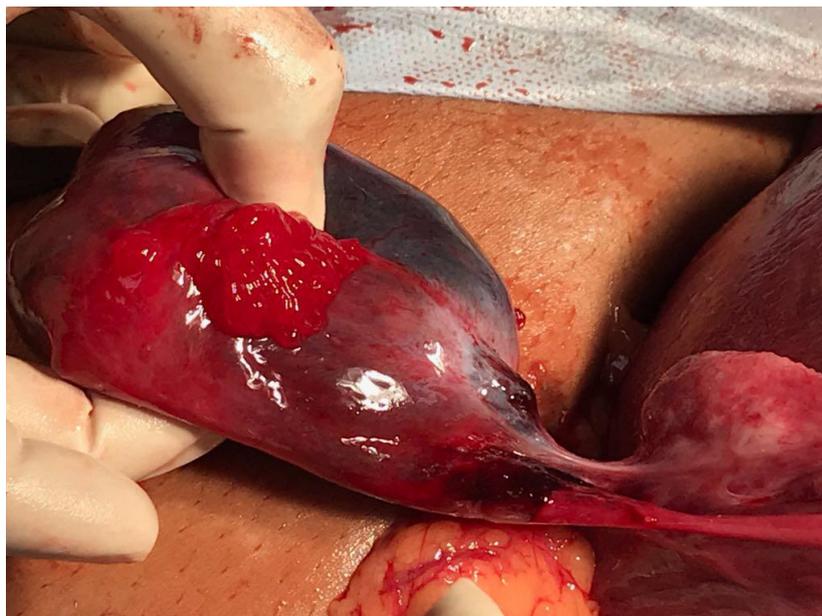
**Obstetric cause** – There are many causes, but we will discuss following-

#### **Ectopic pregnancy**

Incidence of ectopic pregnancy is 1 -2%, 6% of maternal mortality due to rupture ectopic<sup>19</sup>. Most common site of ectopic pregnancy is in fallopian tube, rest in ovary, abdominal cavity, cesarean scar or cervix. Ectopic pregnancy may be due to previous tubal surgery, previous ectopic, past history of pelvic inflammatory disease or infertility treatment.<sup>20</sup> Patients generally present with vaginal bleeding, lower abdominal pain. Diagnosis can be done by transvaginal or transabdominal ultrasound, beta hcg. Patient with ectopic pregnancy treated by.methotrexate or surgically. Ruptured ectopic pregnancy is a grave emergency situation. Clinically patient may present as hemorrogic shock with symptoms of ectopic pregnancy. Patient treatment involves resuscitations and surgical exploration. Photograph 4 & 5 showing picture taking during ruptured ectopic pregnancy's surgical exploration.



**Photograph 4** showing ruptured ectopic pregnancy



Photograph 5 showing ruptured ectopic pregnancy

### Uterine rupture

It is primary if occurs in intact uterus and secondary if occurs in previously scarred uterus. Uterine rupture can be cause for significant perinatal mortality and morbidity.<sup>21</sup> USG abdomen will be helpful in diagnosis. Patient generally managed surgically which includes immediate laparotomy and repair of rent or sometimes hysterectomy.

### References

- [1]. Stedman's medical dictionary,2.(2018) 27<sup>th</sup> edition.
- [2]. Malangoni MA, Gastrointestinal surgery and pregnancy. *Gastroenterol Clin North Am*, 2003;32(1):181-200
- [3]. Augustin G, Majerovic M. Non obstetrical acute abdomen during pregnancy. *Eur J Obstet Gynecol Reprod Biol*. 2007;131(1):4 -12
- [4]. Hancock H, Disease of the appendix caeci cured by operation. *Boston Med Surg J*. 1848;39(17):331-334
- [5]. Andersson R-E, Lambe M. Incidence of appendicitis during pregnancy. *Int J Epidemiol*. 2001;30(6):1281-85
- [6]. Angelini DJ, Obstetric triage revisited: update on non obstetric surgical conditions in pregnancy. *J Midwifery Women Health*. 2003;48(2):111-118.
- [7]. Mourad J, Elliot JP, Erickson L, Lisboa L. Appendicitis in pregnancy: new information that contradicts long held clinical beliefs. *Am J Obstet Gynecol*. 2000;182(5):1027-29.
- [8]. Williams R, Shaw J.Ultrasound scanning in the diagnosis of acute appendicitis in pregnancy. *Emerg Med J*. 2007 ;24(5):359-360.
- [9]. Rosen MP, Ding A, Blake MA, et al. ACR Appropriateness Criteria right lower quadrant pain – suspected appendicitis. *J Am Coll Radiol*. 2011;8(11):749-755
- [10]. Vons C, Barry C, Maitre S, et al Amoxicillin plus clavulanic acid versus appendicectomy for treatment of acute uncomplicated appendicitis; an open label, non inferiority, randomised controlled trial. *Lancet* 2011;377(9777):1573-1579.
- [11]. McGory ML, Zingmond DS, Tillou A, Hiatt JR, Ko CY, Cyber HM, Negative appendectomy in a pregnant women is associated with a substantial risk of fetal loss. *J Am Coll Surg*. 2007;205(4):534-540.
- [12]. Mohammed JA, Oxorn H. Appendicitis in pregnancy. *Can Med Assoc J*. 1975;112(10):1187-1188
- [13]. Landers D, Carmona R, Crombleholme W, Lim R. Acute cholecystitis in pregnancy. *Obstet Gynecol*. 1987;69(1):131
- [14]. Borzellino G, Massimiliano Motton AP et al. Sonographic diagnosis of acute cholecystitis in patients with symptomatic gall stone. *J Clin Ultrasound*. 2016;44(3):152-158.
- [15]. Tham TC, Vandervoort J, Wong RC et al. Safety of ERCP during pregnancy. *Am J Gastroenterol*, 2003;98(2):308-11.
- [16]. Pitchumoni CS, Yegneswaran B. Acute pancreatitis in pregnancy. *World J Gastroenterol*. 2009;15:5641-5646
- [17]. Sanoop Koshy Zachariah, Miriam Fenn. Et al. Management of acute abdomen in pregnancy: current perspectives. *International Journal of Women's Health* 2019;11;119-134.
- [18]. Augustin G, Majerovic M. Non obstetrical acute abdomen during pregnancy. *Eur J Obstet Gynecol Reprod Biol*, 2007;131(1):4 -12.
- [19]. Berg CJ, Callaghan WM, Syverson C, Henderson Z. Pregnancy related mortality in the united states. 1998 to 2005. *Obstet Gynecol*. 2010 ;116(6):1302 -1309.
- [20]. Clayton HB, Schieve LA, et al. Ectopic pregnancy risk with assisted reproductive technology procedures. *Obstet Gynecol*. 2006 ;107(3):595 -604.
- [21]. Chang YL, Chang SD, et al. Perinatal outcome in patients with placental abruption with and without antepartum hemorrhage. *Int J Gynecol Obstet*. 2001;75(2):193-194.
- [22]. Doberneck RC. Appendectomy during pregnancy, *Am Surg*. 1985;51(5): 265-268

Dr Anju kumara. "Acute Abdomen In Pregnancy ; Our Experience." IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 18, no. 9, 2019, pp 26-30.