Original Research Article

A Prospective Study on Pain Abdomen in Patients Presenting to Labour Room, GGH, Kadapa

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Abstract

Introducton: Acute abdominal pain is the most common presenting symptom with which the patients present to labour room.Acute pain abdomen represents a unique diagnostic and therapeutic challenge .Pain abdomen may be due to obstetric and gynaecological causes. In pregnant women ,it may be due to physiological changes. So,it can be misdiagnosed. Effective evaluation is to be needed to combat this issue .**Materials and Methods**:This is a Prospective Study conducted in Labour room , Department of Obstetrics and Gynaecology, GGH , Kadapa over a period of one year(January 2020-December 2020) . Patients who were presented with acute pain abdomen were included in this study irrespective of the age .Patients with labour pains were excluded in this study. **Results**Pain abdomen in pregnancy can occur due to obstetric reasons as well as for reasons unrelated to pregnancy. In this study,200 subjects were included .Among them 140 were obstetric patients and 60 were admitted due to gynaecological causes. Among the 140 patients , pain in 98 patients is due to obstetric causes and remaining 42 due to non- obstetric causes. Many of them were presented in first trimester then 3rd followed by 2ndtrimester.Ectopic pregnancy was the most common cause in 1st trimester, abortions were the major cause in 2nd trimester then Abruption in 3rd trimester. In pain abdomen due to Gynaecological causes, Ovarian cyst was found to be the most common cause followed by fibroid. 2 maternal deaths were noted in pregnant women which were due to non obstetric causes.**Conclusion**Acute abdomen represents a unique diagnostic and therapeutic challenge.Inpregnancy,the pain abdomen may be due to obstetric as well as non-obstetric etiologies.Ectopic pregnancy was to be the most common cause in obstetric patients. Ovarian cyst was found to be the most common cause in patients with gyanaecological causes of pain abdomen. 2 maternal deaths were noted and were due to non obstetriccauses.So,pain abdomen is a tricky diagnosis that require a thorough evaluation and proper care and treatment to combat the dreadful issues to the patients.

Keywords: Pain abdomen, Ectopic, Abortion, Ovarian cyst

Introduction

Acute abdomen represents a unique diagnostic and therapeutic challenge. The term acute abdomen refers to any serious intra abdominal condition accompanied by pain,tenderness and muscular rigidity. It is often an indicative of a clinical course of abdominal symptoms that ranges from minutes to hours to weeks.A wide range of causes and varied spectrum of clinical presentations pose a formidable diagnostic and therapeutic challenge[1-4].Abdominal pain in pregnancy can be due to obstetric as well as non-obstetric causes. The physiological changes in pregnancy may increase the risk of developing an acute abdomen.

Anatomical Considerations:Uterus is usually a pelvic organ and in pregnancy at around 12 weeks, it enlarges and it become an intra-abdominal organ. During early phase of gestatiom, the growth is due to hyperplasia and hypertrophy of the muscle fibres, with subsequent transformation of the uterus into a thick walled muscular organ.Further increase in uterine size occurs due to expansion by distension and mechanical stretching of the muscle fibers by the growing fetus. At 36 weeks, the uterus reaches the costal margin. The uterine bloodvessels also undergo significant hypertrophy to adapt to the increasing demands. The adjacent intra-abdominal viscera tend to get displaced from their normal position to accommodate the enlarging uterus .The stomach, omentum, and intestines are displaced upward and laterally, and the colon can get narrowed due to mechanical compression[5]As the displaced omentum might fail to wall off peritonitis and the relaxed and stretched abdominal wall can mask guarding, the underlying peritoneal inflammation may be missed. The enlarged uterus can compress the ureters, causing hydroureter and hydronephrosis, thereby mimicking urolithiasis. These alterations of anatomical and topographical landmarks can make the diagnosis difficult in case of acute abdominal emergencies[6] Detailed knowledge of anatomical variations can help in arriving at an early diagnosis. Prompt early diagnosis and timely surgical intervention have shown to have a significantly better perinatal outcome.

Physiological considerations: Physiological changes are brought about by an orchestrated interplay of hormones, especially progesterone, leading to a generalized change in milieu by involving almost every organ system. These include endocrine, metabolic, cardiovascular, GI, renal, musculoskeletal, respiratory, and behavioral changes. GI changes such as delayed gastric emptying, increased intestinal transit time, gastroesophageal reflux, abdominal bloating, nausea, and vomiting can occur in 50%–80% of pregnant females.Constipation occurring in the last trimester is attributed to the mechanical compression of the colon along with increase in water and sodium absorption due to increased aldosterone levels. Lawson et al observed that there was a significant increase in the mean small bowel transit time during each trimester (first trimester, 125±48

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minutes; second trimester, 137±58 minutes; third trimester, 75±33 minutes)The physiological leukocytosis of pregnancy can mimic an acute intra-abdominal inflammatory process. The white blood cell counts usually revert to the nonpregnant levels by the sixth postpartum day. The physiological increase in plasma volume in proportion to the red cell volume produces physiological anemia. Also, the relatively decreased hemoglobin concentration along (physiological anemia) with a physiological increase in the heart rate can make the assessment challenging in case of hemorrhage[7]

Non-Pathological Causes of Abdominal Pain

Round ligament pain:The enlarging uterus stretches the round ligament from the second trimester and is believed to cause pain in the lower quadrant of the abdomen in 10 -30% of pregnancies. The pain is either cramping or stabbing in nature. There is little objective evidence to prove that this physiological change in pregnancy is the source of pain. Management of round ligament pain is essentially symptomatic. Measures such as analgesics, local heat, bed rest and reassurance are usually sufficient. Failure of the symptoms to respond to such measures should prompt a review of the diagnosis[8]

Braxton Hicks contractions:These physiological contractions may cause abdominal discomfort in some women in the later half of pregnancy. They are, however, irregular in frequency and intensity; there is no preceding 'show' or cervical changes. With persistent pain it is important to rule out premature labour.

Pathological Causes of Abdominal Pain Inpregnancy:Pathological conditions presenting with abdominal pain in early pregnancy are different from those presenting in later pregnancy .The most common pathological cause of pain in early pregnancy is miscarriage .Abdominal pain in early pregnancy may be due to an ectopic pregnancy when the pain is usually localized to the side of the gestation.

Late Pregnancy-Specific Complications

Placental abruption :Antenatal placental separation presents with acute abdominal pain. This occurs in 0.5-1% of all pregnancies, usually after the second trimester, and in 20% of cases it is entirely concealed. The pain is usually of sudden onset and fetal death may occur.The uterus is tender to palpate with board-like rigidity and inability to palpate the fetal parts. Maternal shock, consumptive coagulopathy and acute renal failure are worrying sequelae .Diagnosis is essentially clinical. Management includes careful monitoring and correction of maternal haemodynamics and coagulation changes. Vaginal delivery is preferred but Caesarean section may be necessary for fetal or maternal reasons. Involvement of senior obstetricians and haematologists has consistently shown a reduction of both perinatal and maternal mortality and morbidity[9]

Conditions Aggravated by Pregnancy:Certain conditions that are incidental to pregnancy are aggravated by the anatomical, metabolic and physiological changes of pregnancy.

Urinary tract infections :These constitute one of the commonest causes for abdominal pain in pregnancy. Symptoms of acute cystitis are seen.. Abdominal pain, dysuria, frequency and haematuria of cystitis are relieved with a course of the appropriate antibiotic. Asymptomatic bacteriuria does not usually co-exist and acute cystitis rarely progresses to pyelonephritis.

Acute pyelonephritis: The hormonal changes of pregnancy cause urinary stasis and obstruction predisposing the woman to acute pyelonephritis. Treatment of asymptomatic bacteriuria in pregnancy will prevent 70% of these cases. Symptoms of acute pyelonephritis include pyrexia, abdominal and loin pain, urinary frequency and vomiting and the woman invariably needs admission. Management includes intravenous hydration, appropriate intravenous antibiotics and symptomatic control of pain and vomiting. Untreated cases may progress to generalized sepsis and adult respiratory syndrome. Acute pyelonephritis in pregnancy also predisposes the woman to premature labour[10]

Ovarian cyst

Routine use of the early dating scan in pregnancy has increased the pick-up of asymptomatic cysts of the ovaries, the majority of which are non-neoplastic and eventually resolve.The anatomical and physiological changes of pregnancy predispose the pregnant woman to acute events in adnexal masses. Simple adnexal masses are liable to torsion in the second trimester and this has been reported in o1% of patients with masses greater than 4 cm. Changes in the pelvic blood supply and stretching of the ligaments by the enlarging uterus may initiate torsion of the ovarian pedicle and the patient presents with acute abdominal pain and signs of peritoneal irritation. Other cyst accidents such as infarction, haemorrhage into cysts and rupture also present as acute abdomen. A delay in diagnosis increases both fetal and maternal morbidity and mortality and when conservative management fails laparotomy is mandatory when removal of the ovary may be necessary. If the corpus luteum cyst is removed in the 1st trimester, exogenous progestogenic support of pregnancy should be given. Simple cysts of the ovary have characteristic sonographic features such as thin walls, they are typically unilocular and intracystic solid elements are absent[11].Simple cysts of the ovary spontaneously resolve by 15 weeks of gestation. A conservative approach to adnexal cysts in pregnancy, with follow-up scans and assessment postpartum avoids surgical intervention and the potential complication of premature labour. Improvements in laparoscopic surgery have made it possible for the pregnant woman with an ovarian cyst to be managed safely by laparoscopic removal of the mass in the second trimester.

Abdominal Pain Inpregnancy Due to Concomitant Pathology

Acute appendicitis : The incidence of appendicitis in pregnancy, 1in 5000, remains the same as in the non-pregnant state and is the most common non-obstetric reason for surgical exploration of the maternal abdomen. Diagnosis of acute appendicitis is confounded by the physiological changes inherent to pregnancy and explains the high rates of negative laparotomy (25^35%) in pregnancy. Nausea and vomiting are common symptoms of both early pregnancy and acute appendicitis. Pyelonephritis is suspected when the inflamed appendix is in contact with the ureter and causes pyuria. Bacteriuria is, however, absent in appendicitis. Anatomical changes of the intra-abdominal organs due to the enlarging uterus, displacement of the omentum and physiological leukocytosis make the classical signs of acute appendicitis difficult to interpret in pregnancy. The area of maximum tenderness is variable and is dependent on the location of the appendix. Worsening of symptoms, a rising white blood cell count and persistence of pyrexia are highly suggestive. Delay in diagnosis leading to perforation of the infected appendix increases the risk of maternal septicaemia and premature labour

Acute cholecystitis and cholelithiasis: Alterations of gall bladder physiology in pregnancy predispose to stasis. Symptoms and signs of acute cholecystitis are the same as in the non-pregnant state and include abdominal pain, nausea, vomiting with right upper quadrant tenderness. The main stay of diagnosis of gallstones is ultrasound with an accuracy of 97%. Ultrasound signs of acute cholecystitis include thickening of the wall of the gall bladder with presence of pericholecystic fluid and sonographical Murphy's sign. Cholecystectomy in pregnancy is indicated when conservative management fails. In situations where the condition is associated with acute pancreatitis the maternal mortality increases to 15% and the perinatal mortality can be as high as 60%. Recently a more aggressive policy has been advised and laparoscopic cholecyste-ctomy in pregnancy has been shown to not only be safe but also to help reduce hospital stay and frequency of premature labour.

Acute pancreatitis : This is rare, complicating1in1000 to1in 10 000 pregnancies. The problem occurs mainly in later pregnancy and the puerperium and gall-stones frequently co-exist.. Nausea, vomiting and severe epigastric pain radiating to the back are typical of acute pancreatitis in both the non-pregnant and pregnant state.. There is no evidence to substantiate the idea that terminating an early pregnancy improves maternal outcome. However, if the pregnancy is near term,

resuscitation of the mother with delivery by Caesarean section is advisable.

Renal calculi:Renal stones complicate approximately 1 in 1500 pregnancies. Symptoms of lumbar pain and microscopic haematuria are frequently confused with acute pyelonephritis. Acute appendicitis is a di¡erential diagnosis when pain is limited to the right quadrant.. Management is essentially conservative with hydration and analgesia.

Acute intestinal obstruction:This rare complication occurs as a result of adhesions following previous surgery and occur as the uterus enlarges into the abdominal cavity in the second trimester and also in the puerperium when involution of the uterus takes place. Volvulus is the other important cause and is more common in pregnancy. Rarer causes of intestinal obstruction include intussusception, hernia, malignancy and inflammatory bowel disease. Diagnosis is often delayed, since symptoms of intestinal obstruction are mistaken for the nausea and vomiting of pregnancy and hyperemesis gravidarum or the abdominal pain for threatened miscarriage. Persistence of symptoms calls for further investigations. In this study, 2 maternal deaths were noted due to intestinal obstruction.

Pain Abdomen due to Gynaecological Causes:

In this study the patients presented with pain abdomen were included. The gynaecological causes were:Ovarian cyst, Fibroid uterus, PID, Cystitis, Hydrosalpinx, Hematocolpos, Ovarian cancer, Vaginitis, Mucinous cystadenoma ovary, Post menopausal bleeding. Various causes were thoroughly evaluated by taking specific history, doing appropriate investigations and were managed specially either by conservative or surgically. No deaths were noted.

Materials and Methods:

This is a prospective study conducted in Labour room, Dept.of OBG,GGH,Kadapa over a period of one year(January 2020-December 2020).Patients who were presented with acute pain abdomen were included in this study irrespective of the age .Patients with labour pains were excluded in this study. Patients with Bronchial asthma, Cardiac failure,. Chronic hypertension, Diabetes like pulse rate, Bp, temperature, respiratory rate were noted**.** Then the study subjects were thoroughly investigated by necessary investigations like Complete blood picture, Peripheral smear,LFT, RFT, Antenatal scan,Ultrasound abdomen and pelvis, Coagulation mellitus, Rheumatic heart disease, Congenital heartdisease, Chronic kidney disease , patients with labour pains were excluded in this study.The patients were categorised as pain due to obstetric causes and Gynaecological causes. In patients with obstetric causes, they were categorized as causes due to obstetric and non-obstetric causes. general examination, patients level of consciousness, degree of anemia, edema, jaundice, any signs of cyanosis were noted. Vitals profile in some patients,complete urine examination, Urine for culture and sensitivity were sent. Results were collected and recorded.Subjects were followed up from admission to discharge. Maternal and Fetal outcome were recorded. Results were recorded and tabulated.In Gynaec patients who presented to labour room and got admitted due to pain abdomen were included in this study.Detailed history regarding the onset,duration,type,site and progression of pain and any associated symptoms were noted.After obtaining the consent, a meticulous general examination carried out. On general examination, patients level of consciousness, degree of anemia, edema, jaundice, any signs of cyanosis were noted. Vitals like pulse rate, Bp, temperature, respiratory rate were noted**.** Then the study subjects were thoroughly investigated by necessary investigations like Complete blood picture, Peripheral smear,LFT, RFT, Ultrasound abdomen and pelvis to know the cause, Complete urine examination, Urine for culture and sensitivity, Pap smear, Endometrial biopsy,MRI abdomen and pelvis were done in some specific cases to conclude the diagnosis. Based on this, proper treatment either conservative or surgical management done. All the results were recorded and tabulated.After obtaining the required data, the recorded results were compiled and percentages were calculated using Microsoft Excel 2007.

Results

In Obstetric patients, most of them were between the age 20-35years.

Duration :

Most of the patients presented with pain abdomen with duration of 2 days followed by 1day then 3 days.

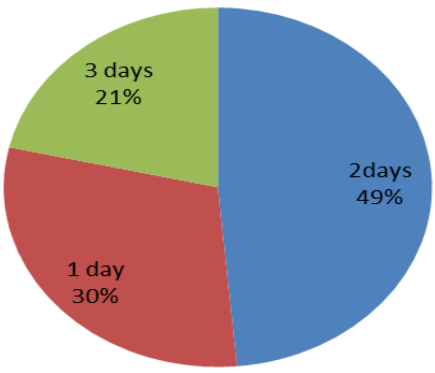


Fig 1: Duration

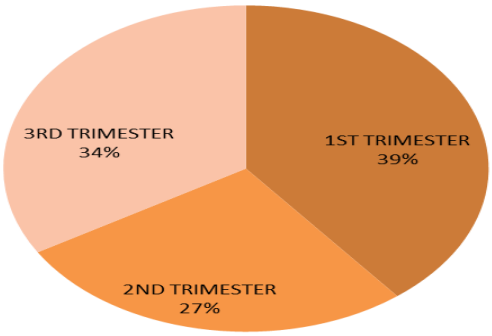


Fig 2: Trimesters

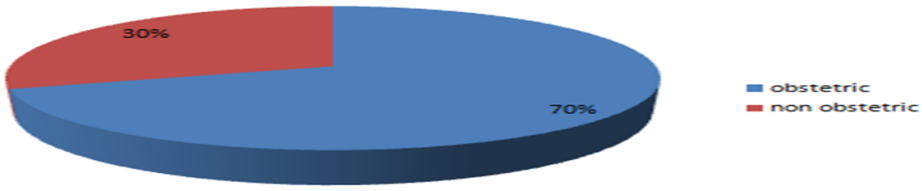


Fig 3: Causes

OBSTETRIC CAUSES	NON OBSTETRIC CAUSES
Ectopic pregnancy	Appendicitis
Abortions	Appendicular mass
Uterine perforation	Renal calculi
Molar pregnancy	UTI
Abruption	Intestinal obstruction

Fig 4: Obstetric Causes

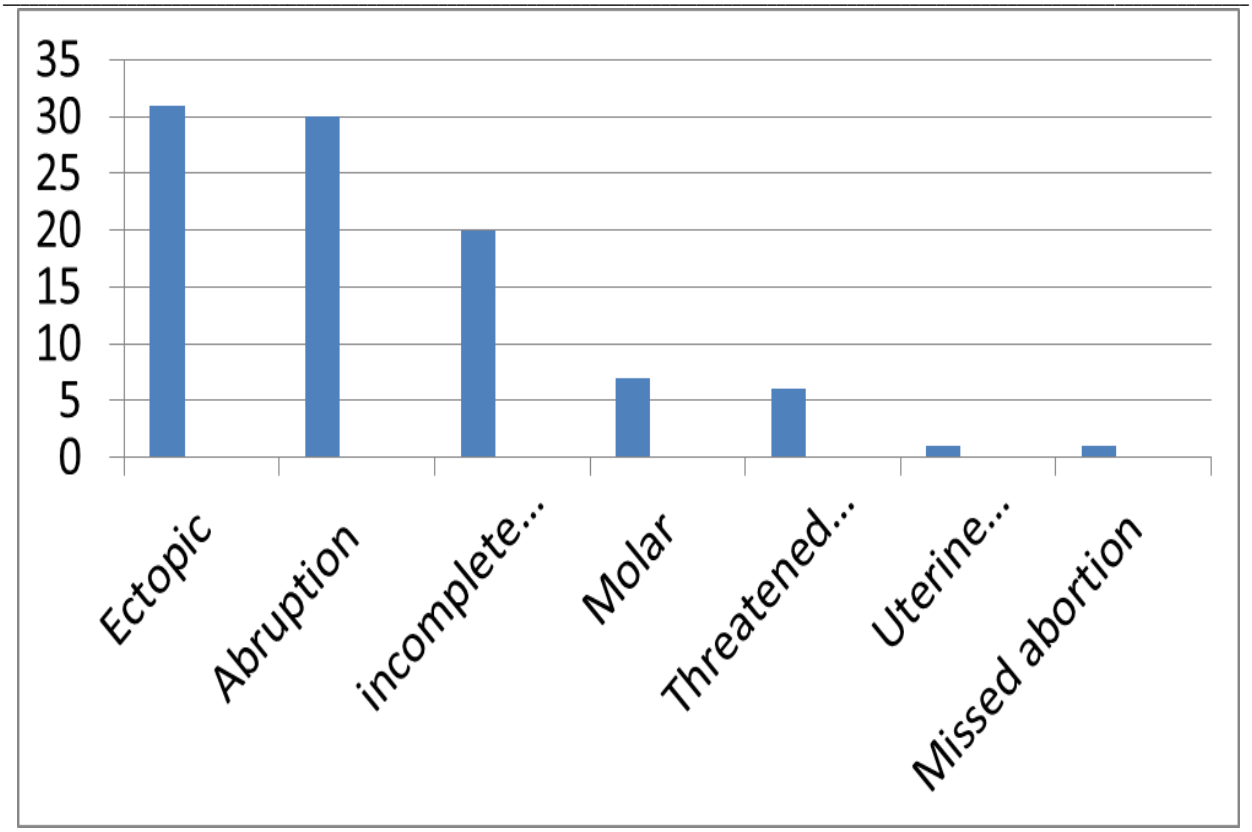


Fig 5: Non Obstetric Causes

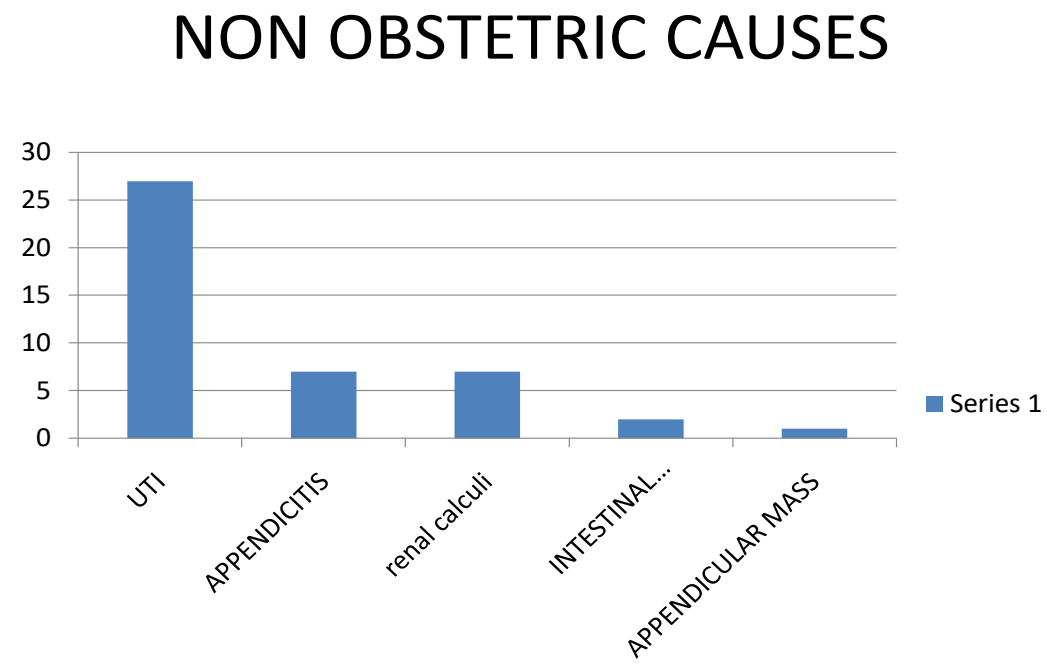
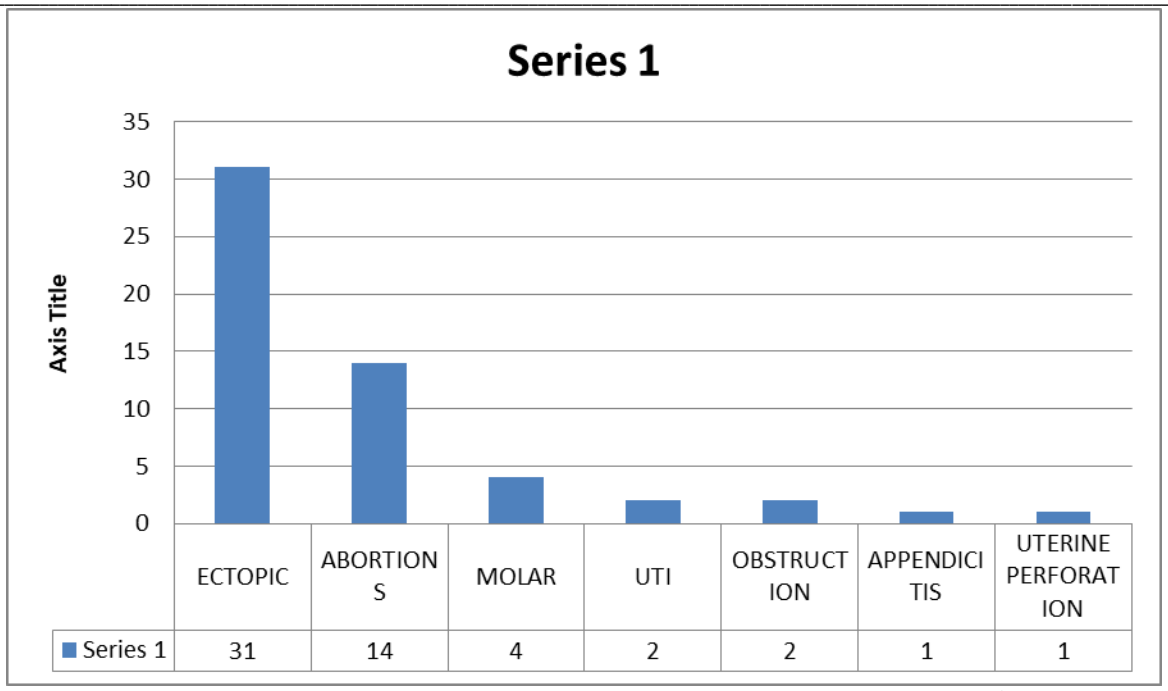
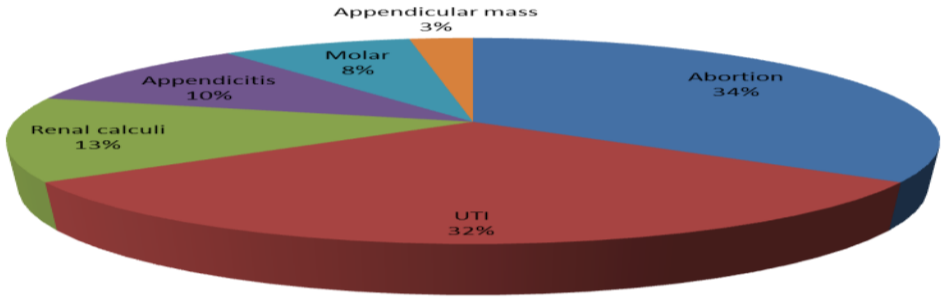


Fig 6:1st Trimester



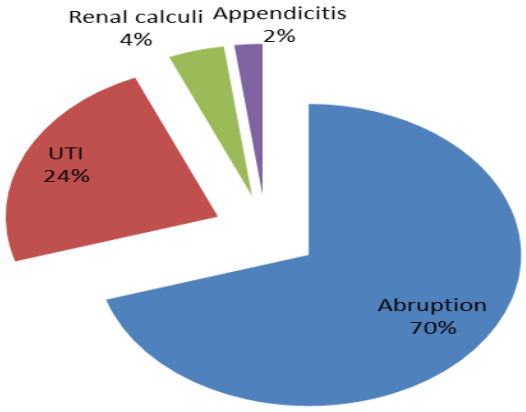
In these causes, 90.09% constitute the Obstetric causes and rest9.09% were due to non-obstetric causes. Ectopic was found to be the most common cause.

Fig 7:2nd Trimester



In this, 73.61% were obstetric causes and 26.31% due to non- obstetric causes. Abortions were found to be the most common cause.

Fig 8: 3rd Trimester



In this, 70% were due to obstetric causes and 30% due to non-obstetric causes. Abruption was found to be the most common cause

Outcome:
Out of 140 patients who presented with pain abdomen, 31 were ectopic(22.14%) and had undergone laparotomy. 33 were due to Abruption(23.57%), 27 got aborted (19.2%). 7 were due to molar pregnancy(5%), uterine perforation (0.7%).
32 cases undergone emergency laparotomy, 27 got aborted, Among the remaining 79, conservative management was done for non-obstetric causes and the final outcome was 50 had vaginal delivery and 29 had LSCS,2 maternal deaths were noted.
20 babies needed SNCU admission, among which most common cause is preterm and fetal distress.10 were IUD S.
Among the non-obstetric causes, UTI (17.8%)was found to be the most common cause, Appendicitis (5%),Renal calculi(5%),obstruction (1.42%),Appendicular mass (0.71%). 2 maternal deaths were noted.

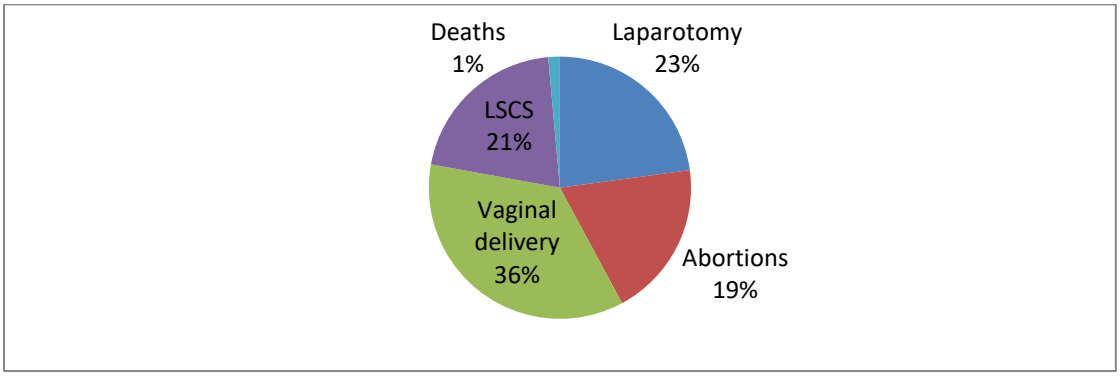


Fig 9: Fetal Outcome

10 were IUD s, 20 babies needed SNCU admission

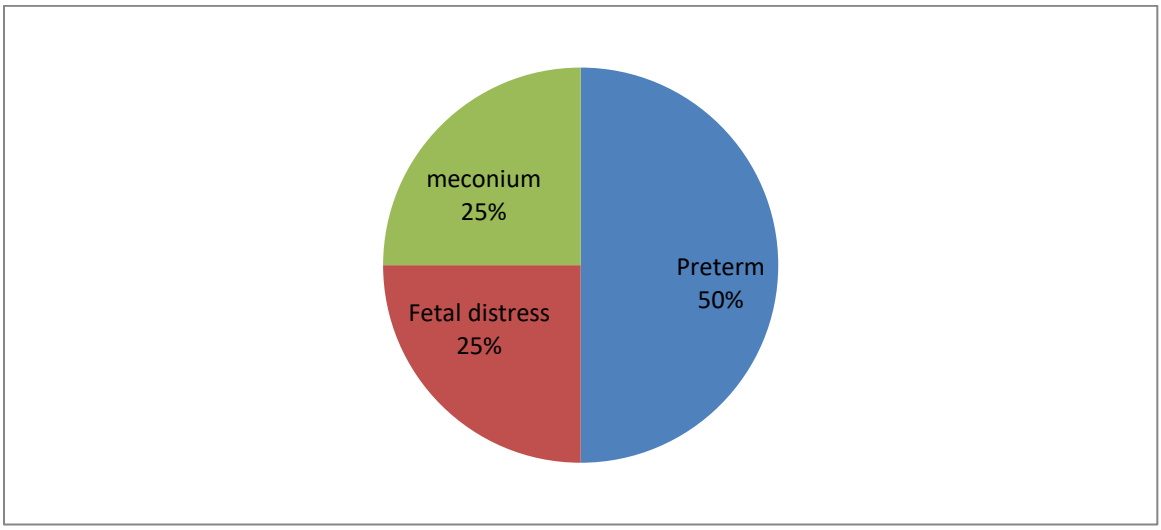


Fig 10: Gynaecological Causes

In patients with pain abdomen due to Gynaecological causes,58.3% were due to ovarian cyst which were managed mostly by laparotomy and some with conservative management. The second common cause is fibroid (9%). Others were PID (10%), Post menopausal (3.2%), Cystitis(1.6%), Hydrosalpinx (1%), Hematocolpos(1%), Ovarian cancer(3.2%), Vaginitis(1.6%) , Mucinous cystadenoma ovary (1.6%). No deaths were noted.

Conclusion

Pain abdomen is the most common presenting complaint in both Obstetric and Gynaecological cases. Acute abdomen in pregnancy can be due to Obstetric as well as non-Obstetric causes.Life threatening complications may not manifest with classical presentations.A clear understanding regarding anatomical and physiological changes in pregnancy ,systemic evaluation, adequate knowledge regarding investigations needed. A multidisciplinary approach is indispensable for timely diagnosis and treatment of pregnant women with acute abdomen[12,13]In Gynaecpatients , a thorough evaluation is needed to know the exact cause. Sometimes there may be coexistence of more than one cause for the symptom. Pain the outward expression of some pathological thing going on inside the body. So, we should take the warning signal signal of the body and we have to evaluate the things properly to come to a final conclusion and treatment should be focussed on it. Our aim is early

detection of the disease and proper treatment that will decrease the incidence of complications and deaths. [14-15]

"**Pain is Inevitable But Suffering is Optional"**

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