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**Case Report**

# ANC with acute abdomen: a case report from secondary care hospital, Western Maharashtra

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## ABSTRACT

Female body undergoes numerous anatomical and physiological changes in pregnancy which make diagnosis and management of acute abdomen in pregnancy as a most challenging situation. This may lead to dilemma and delayed identification of spectrum of causes of acute abdomen in pregnancy ultimately resulting in maternal and foetal morbidity and mortality. This case was to identify the spectrum of causes, the clinical presentation and diagnostic dilemma of acute abdomen in pregnancy. We presented one of the unusual and rare cause of acute abdomen with hemoperitoneum. Patient underwent emergency laparotomy with peritoneal wash with no obvious bleeding cause but evidence pointing towards vascular tumour or sub-serosal fibroid. The diagnosis remained obscured. The dilemma was attributed to higher radiological imaging with possibility of Haemorrhagic corpus luteum and non-viable heterotopic pregnancy. The cause of bleeding could not be identified with higher imaging due to contraindicated use of contrast enhanced MRI/CT and other alternatives due to radiation exposure in pregnancy. Diagnosis and treatment of acute abdomen in pregnancy should be individualized for better prognosis. Good clinical acumen is essential for ordering early diagnosis and intervention in acute abdomen in pregnancy.

**Keywords:** Aascular tumour, Sub-serosal fibroid, Ultrasonography, MRI, CT haemorrhagic corpus luteum, Non-viable heterotopic pregnancy emergency laparotomy, Peritoneal wash

## INTRODUCTION

A female body undergoes numerous anatomical and physiological changes in pregnancy which makes the diagnosis and management of acute abdomen in pregnancy as a most challenging situation due to obstetric and non-obstetric factors as well for reasons that are unrelated to pregnancy.

Acute abdomen refers to any serious acute intra-abdominal condition accompanied by pain, tenderness, and muscular rigidity, for which emergency surgery should be contemplated. The global incidence accounts for 1 in 500 to 1 in 600 pregnant women.[2] About 0.5%-2% of all pregnant women require surgery for non-obstetric acute abdomen.[2,3] The diagnostic approach of AAP becomes challenging due to reluctance to use radiological diagnostic modalities like X-ray or computed tomography (CT) scan and a low threshold to subject the patient to an emergency surgical procedure along with difficult physical examination and shift in normal laboratory parameters.[8]

The systematic approach is necessary for an accurate and timely diagnosis of potentially life-threatening conditions, which otherwise could be precarious for both the mother and foetus. This study focuses on developing a strategy for timely diagnosis and management of pregnant women presenting with acute abdominal pain with multidisciplinary approach and meticulous post-operative care.

## CASE REPORT

A 29-year booked patient with an obstetric score of primigravida at 16 weeks 5 days of gestation with post IVFET pregnancy with DCDA live twins with cervical cerclage in situ on antiplatelet drugs and progesterone support came to emergency department with episode of syncope followed by vomiting, diffuse pain abdomen and shoulder pain after consciousness. There was no history of bleeding or discharge per vaginum or trauma. Previous foetal sonograms were normal.

On presentation, patient's general condition was fair with signs of mild pallor. Hemodynamically, raised BP and tachycardia was present (BP: 168/110 mmHg, pulse: 112 bpm). There was no overdistention or tenderness of abdomen, uterine height was nearly 20 weeks extending upon the lower level of umbilicus, external ballotability was present. FHS could be appreciated. Per speculum examination revealed vagina was healthy, cerclage in situ with no signs of inflammation or bleeding and cervical OS was closed. On per vaginal examination cervix was medium, posterior, OS closed, uneffaced making the bishop score 1 indicating no signs of labour onset.

Pre-liminary investigations on admission revealed blood group O positive, Hb- 9.1 g/dl, TLC- 22800, platelet- 1.76 lakh, PT (13/15), APTT (30/33 urine RE/ME- NAD, FBS/PPBS- 96/107, ECG- sinus tachycardia, top T: Neg, RBS: 120 mg/dl, urea/creatinine: 15/0.8, total bilirubin (D): 0.4/0.1, T. pr: 5.6 albumin/globulin: 3.0/2.6, OT/PT: 137/4.0.

Ultrasonography at 16 weeks 5 days revealed twin live (DCDA foetus) of 16 weeks 1days with normal foetal movement and cardiac activity. Gross ascites likely haemorrhagic and cystic lesion (3.5×3.2) seen in right adnexa likely corpus luteal cyst. Patient was admitted in ICU and serial evaluation was done

Patient became agitated, developed tenderness and guarding in epigastric region, tympanic note +, bowel sound sluggish.

Hb: 7.6; TLC: 19900 (89/08/02/0); platlet: 180000; INR: 1.3, urea/creatinine: 15/0.8; S. bilirubin: 0.9 (D:0.6), sodium/potassium: 137/4, amylase: 37, lipase: 34. Diagnostic peritoneal tap grossly haemorrhagic fluid drawn.

Patient immediately taken up for emergency laparotomy and proceed. Intra-operatively, Vertical midline incision extending 3 cm above umbilicus to suprapubic border was given. There was frank blood in peritoneum with multiple clots. With peritoneal wash approximately 1.5-2 l of blood drained. Abdominal cavity explored. There were dense adhesions between bilateral ovaries and posterior uterine wall that hindered visualisation of pouch of Douglas. A well-defined pedunculated soft tissue growth likely formed from blood vessels measuring 4×4 cm located 1cm right postero-lateral of uterine cornua was seen. Its surface was non bleeding hence left undisturbed in situ. In upper quadrants no active bleeder was identified. Intra-op resuscitation was done with 6 units crystalloids, 2 units PRBC, 1 unit cryoprecipitate and 1-unit fresh frozen plasma. After achieving haemostasis bilateral intra-abdominal drain was put.

Post-operatively, patient was monitored in ICU. Post-op events as mentions below.

MRI revealed well- defined cystic lesion, measuring 27×31×34 mm in right adnexa, abutting the right posterolateral uterine wall, with small eccentric lesion along its medial wall, measuring 15 mm with possibility of haemorrhagic corpus luteum but B/L ovaries could not be visualised. She recovered well and discharged to home on day 14 at 18 weeks 5 days POG with twin live intrauterine pregnancy.

**Table 1: Systemic post-op follow up and management.**

| Days | Symptoms | Signs | Investigations | Interventions | Remarks |
|---|---|---|---|---|---|
| **0** | Mild pain abdominal at operative site<br>breathlessness, mild shoulder pain<br>anxiety for babies | Facial oedema<br>Pulse:124 bpm<br>BP: 112/70<br>RR: 36/min<br>SPO2: 94%<br>Output: 3088 ml<br>Drain right: 50 ml<br>Lt: 38 ml sanguinous<br>GCS:15/15<br>abdominal girth:84 cm | Haematology<br>HB: 7.6 g/dl. PCV: 22%<br>TLC: 18100 cumm (90/09/01/00)<br>Plt: 1.01 lk INR:1.4<br>biochemistry<br>RBS: 120,<br>Urea/cretinine: 15/0.8<br>T. bil: 1.9 (D:0.8)<br>T. pr: 5.6 (alb:3)<br>OT/PT: 37/56<br>Sod/pot: 137/3.7<br>USG chest and abdominal:<br>Rt basal lung: perihepatic minimal | IV fluids: 3146 ml<br>4 units PRBC<br>4 units FFP<br>epidural analgesia<br>broad spectrum antibiotics<br>progesterone support<br>nasal prongs@2 l/min<br>injection fentanyl 20 mcg SOS<br>Head prop up | Reassurance<br>haemoglobin built up<br>Post-op infection care<br>indirect hyperbilirubinemia |

Continued.

| Days | Symptoms | Signs | Investigations | Interventions | Remarks |
|---|---|---|---|---|---|
| | | | fluid, fluid seen in hepatorenal pouch<br>IVC: 16-14 mm<br>Uterus: both foetuses<br>FCA present, FM + | | |
| **1** | Pain upper abdomen, flatus not passed, swelling left lower limb | Epigastric tenderness, right hypochondrial tenderness<br>mild dehydration, bowel sound sluggish<br>Pulse: 98<br>BP: 120/78<br>RR: 28<br>$SPO_2$: 92%<br>output: 1200 ml<br>drain right: 100 ml, left: 5 ml serosanguinous<br>GCS:15/15<br>abdominal girth:88 cm | Haematology<br>HB: 8.3 g/dl. PCV: 24%<br>TLC: 12200 cumm (86/09/03/02)<br>Plt: 90,000 INR:1.2<br>Biochemistry<br>RBS: 77, urea/creatinine:18/0.6<br>T. bil: 2.0 (D:0.9)<br>T. pr: 4.3 (Alb:2.3)<br>OT/PT: 60/53<br>Sod/Pot: 141/3.4 | 1-unit whole blood<br>injection KCL 20 meq<br>fundoscopy: WNL<br>DVT stockings<br>sips of fluid<br>nasal prongs<br>total fluid: 1200 ml<br>IV antibiotics | Haemoglobin built up<br>Post-op infection care<br>indirect hyperbilirubinemia |
| **2** | Pain upper right abdominal omen faeces and flatus not passed decreased tone in B/L lower limbs | Abdominal distension present, tense and tender with sluggish bowel sound<br>pulse: 106<br>BP: 142/82<br>RR: 26<br>$SpO_2$: 91%<br>Output: 2275<br>Drain: right: 100 left: 5.8 ml serosanguinous<br>GCS:15/15<br>abdominal girth: 90.5 cm<br>ECG: WNL | Haematology<br>HB: 9.2g/dl. PCV: 27%<br>TLC: 10600 cumm (85/10/03/02)<br>Plt: 80,000 INR: 1.4<br>biochemistry<br>RBS: 73, urea/creatinine:16/0.6<br>T. bil: 1.2 (D:0.5)<br>T. pr: 4.6 (Alb:2.5)<br>OT/PT: 61/73<br>Sod/pot: 140/3.0 | Injection KCL 60 meq<br>chest physiotherapy<br>restricted fluid intake: 1200 ml<br>ambulation bedside<br>HFMF@6 l/min<br>left drain removal<br>IV antibiotics (injection piptaz 4.5 mg OD, tab azithromycin 500 mg OD)<br>epidural analgesia stopped | Suspected TRALI/hospital acquired pneumonia<br>fluid balance<br>borderline electrolyte imbalance |
| **3** | General condition improved; flatus not passed | Pulse: 88<br>BP: 134/88<br>RR: 24<br>$SpO_2$:94%<br>Output: 2800<br>Drain: right 50<br>GCS:15/15<br>abdominal girth: 88 cm<br>flatus and faeces passed | Haematology<br>HB: 9.9 g/dl. PCV: 29%<br>TLC: 10600 cumm (84/13/02/01)<br>platlet: 1.01l k INR:1.4<br>biochemistry<br>RBS: 84, urea/creatine: 13/0.6<br>T. bil: 1.1 (D:0.4)<br>T. pr: 4.4 (Alb:2.4)<br>OT/PT: 80/32<br>Sod/pot: 137/3.4<br>fundoscopy WNL | Injection KCL 60 meq<br>chest physiotherapy<br>restricted fluid intake: 1400 ml<br>ambulation increased<br>intermittent nasal prongs<br>left drain removal<br>IV antibiotics (injection piptaz 4.5 mg OD, injection targocid 400 mg | Borderline electrolyte imbalance<br>hypoalbuminemia |

Continued.

| Days | Symptoms | Signs | Investigations | Interventions | Remarks |
|---|---|---|---|---|---|
| | | | | BD, Tab Azithromycin 500mg OD) | |
| **4** | Breathlessness, improved faeces and flatus passed | B/L basal crepts present, Pulse: 76<br>BP: 118/76<br>RR: 22<br>$SpO_2$:95%<br>Output: 2650<br>Drain: right: 60 ml<br>GCS: 15/15<br>bowel sound present | Haematology HB: 10.3g/dl. PCV: 29%<br>TLC: 7300 cumm (77/18/04/01)<br>platelet: 1.3l k<br>biochemistry<br>RBS: 72,<br>urea/cretinine:15/0.5<br>T. bil: 1.5(D:0.5)<br>T. pr: 4.2 (Alb:2.3)<br>OT/PT: 155/109<br>Sod/pot: 138/3.8<br>USG abdominal: No abdominal free fluid, B/L minimal pleural effusion, twin intrauterine live pregnancy | Soft diet<br>high protein diet<br>fluids 2 l/day oral<br>ambulation for routine activities<br>intermittent nasal prongs with nebulisation<br>IV antibiotics (injection piptaz 4.5 mg OD, injection targocid 400 mg od) tab azithromycin 500 mg OD)<br>injectable multivitamin | Hypoalbuminemia mild transaminitis |
| **5** | Symptomatically better, tolerating oral fluids present | Pulse: 76<br>BP: 118/76<br>RR: 22<br>Spo2:98%<br>Output: 2650<br>Drain: right: 60ml serosanguinous<br>bowel sound present and adequate<br>B/L normal vesicular breath sounds | Haematology<br>HB: 11.3 g/dl. PCV: 33%<br>TLC: 8800 cumm (74/18/07/01)<br>Platlet: 1.7l k<br>biochemistry<br>RBS: 81,<br>urea/cretinine:25/0.7<br>T. bil: 1.3(D:0.4)<br>T. pr: 5 (Alb:3.6)<br>OT/PT: 324/341<br>Sod/Pot: 136/4.3 | Normal diet<br>High protein diet<br>Fluids 2.5-3 l/day oral<br>routine activities<br>room air<br>continued with above antibiotics till day post op day 10 | Stable, general condition improved<br>Shifted to ward for general post op care<br>right drain removal |
| **14** | Asymptomatic | Pulse: 78<br>BP: 126/68<br>RR: 18<br>Spo2: 98% @room air | Haematology<br>HB:11.4 g/dl. PCV:34%<br>TLC: 9500 cumm (73/18/07/02)<br>Platlet: 1.95l k<br>biochemistry<br>RBS: 86,<br>urea/cretinine:20/0.7<br>T. bil: 1.1(D:0.6)<br>T. pr: 6.1 (alb:4.1)<br>OT/PT: 300/507<br>Sod/pot: 136/4.3 | Normal diet<br>plenty of fluids | Healthy, well recovered, suture removal, wound healthy,<br>appetite normal<br>discharged to home |

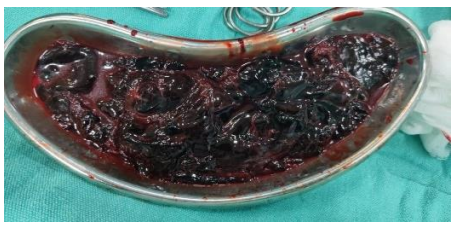

**Figure 1: Intra-operative findings of massive haemorrhage.**

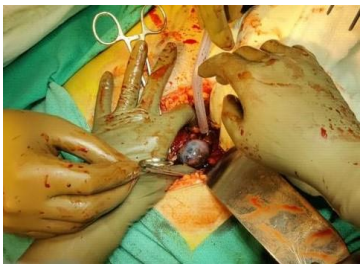

**Figure 2: Intra-operative right adnexal lesion.**

## DISCUSSION

This case report presents a case of acute abdomen with hemoperitoneum in pregnancy. This case also highlights the complexity of investigating GI complications within pregnancy, with our surgical and medical colleagues hesitant to extensively investigate antenatally and restricted ultimately by the repertoire of investigations available in pregnancy.

We performed a search of the medical literature by using PubMed. Additional references were obtained from the bibliographies of the identified articles and from recommendations of expert consultants.

Non-obstetric causes of bleeding are relatively uncommon and can be challenging to both investigate and treat antenatally. Modern endoscopic techniques, in the form of capsule endoscopy, are still considered to be contraindicated in pregnancy due to an absence of clinical trials performed in pregnant patients.[8,9] Multidisciplinary approach is imperative, with the obstetric team leading the overall care, but influenced by the experience and knowledge of other medical and surgical specialties.

On MRI, the possibility of cause of bleeding was due to ruptured corpus luteum. Corpus luteum cysts during pregnancy are common ovarian cysts formed when the corpus luteum fails to shrink after about 12 weeks of pregnancy, causing it to fill with fluid. These cysts are common during pregnancy and not usually troublesome. But, if these are not treated immediately, they might continue to grow, rupture and twist, giving rise to pregnancy complications.[10,11] It is unlikely a cause because intraoperative ovaries were densely adhered to posteriorly with no anatomical connection between ovaries and lesion and there is rare possibility of corpus luteum cyst in 2$^{nd}$ trimester pregnancy. There is increased vascularity of uterus and reproductive organs during pregnancy which restricted the excision of soft tissue tumour for histopathological examination. MRI showed second possibility of nonviable heterotopic pregnancy which can be ruled out as there is no such description found in previous sonographic scans and intra-operatively no gross features were collaborative with MRI finding description (cystic lesion measuring 3 mm with corresponds to 8 weeks of POG with embryo). The cause of dilemma is non-identification of embryo/foetus due to long interval between pregnancies.

The second possibility of hemoperitoneum in above case can be serosal fibroid with rupture of serosal vessels due to increase vascularity and rupture of fibroid during pregnancy.[4-6] Supporting evidence was increased congestion of serosal vessels in relation to lesion. But absence of any active bleeder from the superficial ruptured vessel overlying the sub-serosal fibroid on the adnexal region. Limitation of contrast enhanced CT was the main cause of dilemma.

Postoperatively the care was taken by multi-Speciality. A full clinical history is essential and will guide antenatal investigations for involvement of multi-speciality team (general physicians, general surgeons and radiologists) for better outcome. The clinical history and initial investigations suggested ruptured appendix, peptic ulcer perforation, perforation peritonitis however emergency laparotomy was the only diagnostic and treatment modality for the confirmation of the cause due to restricted use of higher imaging modalities in pregnancy. A pregnant patient presenting with symptoms and signs of acute abdomen should initially be resuscitated and managed as for a non-pregnant patient. A full discussion with the multidisciplinary team needs to occur to be carefully balanced against the immediate health needs of the mother.

The cause of bleeding in the case remained obscured with suspicions of AV malformation, sub-serosal fibroid and heterotopic pregnancy.[4,5] Ultimately mother and twin foetuses had excellent outcome despite of rare and complex complication in second trimester of precious pregnancy (IVF pregnancy).

## CONCLUSION

When a patient presents with unconsciousness and acute abdomen, she should be closely observed in hospital settings for symptomatic progression, vital monitoring and serial blood investigation for early identification of hemodynamic instability and initial management. It is important to consider non-obstetric causes of bleeding in the bleeding pregnant patient. A multidisciplinary approach is imperative with coordination between specialists to provide a more holistic management approach to the antenatal patient. Non-obstetric specialties can be reluctant to fully investigate the antenatal patient, and it requires support and guidance from the obstetric team to ensure complicated patients receive comprehensive care.

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