

POTENTIALLY GRAVE GASTRO-INTESTINAL TRACT PROBLEMS IN PREGNANCY - A CHALLENGE TO THE OBSTETRICIAN!

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ABSTRACT

CONTEXT

Acute surgical pathology may be overlooked in pregnancy. Despite advances in medical technology, preoperative diagnosis of potentially grave pathologies of the gastrointestinal tract (GIT) is often delayed due to overlap with symptoms of pregnancy non-specific elevation of some laboratory parameters due to pregnancy and a dilemma for obstetricians and surgeons in ordering radiological imaging modalities given the risk associated with fetal exposure to ionizing radiation and contrast.

AIMS

The aim of this study is to analyse the cases of gastrointestinal tract problems encountered in pregnancy so that increasing awareness can be created among obstetricians. This is important because early diagnosis and timely intervention can significantly improve maternal and fetal outcome in these cases.

SETTINGS AND DESIGN

There is a retrospective case study of potentially grave GIT problems encountered at Vanivilas hospital, Bangalore, a tertiary referral institute wherein the clinical presentation was confounded by pregnancy.

MATERIALS AND METHODS

All the included cases were analysed for age of the patient, pre-existing gastrointestinal tract disorders, gestational age at diagnosis, maternal and fetal outcome.

RESULTS

A total of 8 cases of GIT problems in pregnancy were studied. Though acute appendicitis is the most common cause of GIT emergency in pregnancy as quoted in literature 5, we did not encounter any case of acute appendicitis in pregnancy in the study period. Other conditions which were encountered were small bowel obstruction, stomach and bowel perforation and bleeding oesophageal varices. Whilst few of the conditions could be managed conservatively without harm to the pregnancy, others required a laparotomy and reparative procedures. Delay in diagnosis and intervention proved to be fatal in some of these women.

CONCLUSIONS

Knowledge about potentially grave gastrointestinal tract problems during pregnancy, high index of clinical suspicion, prompt diagnosis (including radiological investigations) and timely intervention including laparotomy, when indicated will help to reduce maternal and foetal morbidity and mortality.

KEYWORDS

Gastrointestinal tract problems, grave, pregnancy.

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INTRODUCTION: Though there have been tremendous advances in medical technology, especially imaging techniques, preoperative diagnosis of potentially grave problems of the gastrointestinal tract (GIT) is often delayed. This is because many symptoms of GIT pathologies overlap with pregnancy associated causes like pain abdomen, nausea, vomiting and constipation.^{1,2} Besides, laboratory parameters are not specific and often altered as a physiological consequence of pregnancy.³ There is an

additional dilemma for obstetricians and surgeons in ordering radiological imaging modalities like X-ray, CT and MRI given the risk associated with foetal exposure to ionizing radiation and contrast.⁴ A high index of clinical suspicion and knowledge about these conditions is necessary. Laparotomy still remains the procedure of choice in complicated and uncertain cases, though it is often decided a little too late. Acute appendicitis is the most common cause of GIT emergency in pregnancy (0.02-0.07%).⁵ Other conditions which one needs to be equally aware of include small bowel obstruction, stomach and bowel perforation, bleeding oesophageal varices and inflammatory bowel disease in pregnancy. A good knowledge about such GIT pathologies complicating pregnancy and timely intervention may help in preventing maternal and foetal morbidity and mortality.

AIMS AND OBJECTIVES: To increase awareness among obstetricians, who are the first point of medical contact for any pregnant woman to improve maternal and fetal outcome in potentially grave GIT problems encountered in pregnancy.

MATERIALS AND METHODS: A series of cases of GIT pathologies complicating pregnancy during a period of 2 years at a tertiary referral hospital was collected retrospectively. All the included cases were analysed for age of the patient, pre-existing GIT disorders, gestational age at diagnosis, maternal and foetal outcome. How the co-existence of a pregnancy confounded the diagnosis and caused an occasional delay in the management of the GIT pathology has been highlighted.

RESULTS: The total number of deliveries during this period of 2 years was 31,260. 8 cases of GIT emergencies in pregnancy were encountered, with the incidence being 0.25 per 1000 deliveries. Whilst few of the conditions could be managed conservatively without harm to the pregnancy, others required a laparotomy and reparative procedures. Delay in diagnosis and intervention proved to be fatal in some of these women.

A total of 8 cases have been studied. Table 1 shows the spectrum of GIT disorders diagnosed during the study period.

Part of GIT	Pathology	No. of cases	Maternal mortality
Oesophagus	Oesophageal varices	3	0
Stomach	Stomach perforation	1	1
Small bowel	Small bowel obstruction	2	1
	Small bowel perforation	2	0
Large bowel		none	none
Total		8	2(25%)

Table 1: Spectrum of potentially grave GIT disorders encountered in pregnancy during the study period

Each of the cases, their clinical presentation, management and outcome have been discussed below.

There were 3 cases of oesophageal varices complicating pregnancy.

Case 1: G6P3L0 with 28 weeks of gestation presented for antenatal care. She was diagnosed to have splenomegaly with a portal cavernoma which was incidentally picked up on the anomaly scan. Upper GI endoscopy was done and she was diagnosed as extrahepatic portal vein obstruction with grade 3 non bleeder oesophageal varices. She underwent banding for the varices thrice at an interval of 3 weeks and was asymptomatic (Fig. 1). Liver function tests were normal throughout. She was admitted in labour at 37 weeks with clinical suspicion of IUGR. LSCS was done for meconium stained liquor and a 2.1 kg baby with good APGARs was delivered. Post-op period was uneventful and she was managed with pantoprazole.



Fig. 1: Appearance of oesophageal varices after banding on endoscopy

Case 2: G2A1with 35 weeks' gestation with intrauterine foetal demise was referred in a state of hypovolemic shock on vasopressor support. She was a case of chronic liver disease with oesophageal varices with post-splenectomy status. She had hypotension secondary to several episodes of hematemesis. There was history of similar episodes of hematemesis 4 years back which required blood transfusion. On admission, BP was 106/74 on noradrenaline drip. She had gross ascites. Hb was 5.1gm%. Since she was symptomatic, she was started on Inj. Somatostatin 250ug stat and 2500ug over 12hrs. Stomach wash was given and Ryle's tube was inserted. She was also started on inj. Vit. K and tab. propranolol. Upper GI endoscopy was performed by the surgical gastroenterology team and was diagnosed as portal hypertensive gastropathy with post banding sequelae. 5 units of packed cells was transfused for correction of anaemia. 48 hours later, labour was induced and she delivered a dead male baby of 2.6kg. Patient continued to improve, was tolerating oral feeds and was discharged on post natal day 5.

Case 3: G3P2L0 with 38weeks 5 days gestation was admitted for safe confinement. She was a diagnosed case of extra hepatic portal vein obstruction with oesophageal varices with post variceal banding status. She had 2 episodes of hematemesis and 1 episode of melena. Hb was 5.6gm% and platelet count was 42000. She received 5 units of

packed cell transfusion for the anaemia resulting from hematemesis and 6-pint platelet transfusion. She underwent variceal banding. She went into spontaneous labour and delivered a healthy baby. Vacuum was applied to cut short the second stage of labour. The post delivery period was uneventful.

Case 4: G2P1L1 was admitted at 32 weeks gestation with gross abdominal distension. Her vitals were stable. Scan done repeatedly revealed polyhydramnios with AFI 40 with no other abnormalities. Indomethacin was started. It was decided to do abdominal tapping after 3 days as patient had respiratory difficulty. A purulent tap of about 500ml was obtained. Laparotomy was done and a live male baby with good APGARs was delivered by LSCS. The uterus and adnexa were normal as also the liquor quantity. A perforation of 2x2cm was noted in the greater curvature of the stomach. What was diagnosed on scan as polyhydramnios was actually 1.5 litres of purulent peritoneal fluid secondary to probably a peptic ulcer perforation. Patient continued to deteriorate after laparotomy and succumbed to sepsis on postop day 2.

Case 5: Primi with 37 weeks of gestation was referred with intra uterine foetal demise and h/o on and off vomiting since 1 month and not passing urine since 1 day. For the past 1 month, she had seen several doctors and was prescribed antacids and anti-emetics. Vitals were stable on admission but patient looked toxic and dehydrated. On examination, uterus was 36 weeks size, abdomen was tense and tender, FHS not localized and patient was in early labour. Hb was 16.6gm% and total count was 19000. She continued to be anuric. A working diagnosis of IUFD induced sepsis with acute kidney injury in labour was made. Patient was sent for scan for confirmation of foetal demise. Scan revealed IUFD but no other abnormalities. 2hrs after admission, patient was shifted to ICU as she had 2- 3 episodes of vomiting, developed tachypnoea and tachycardia with increasing abdominal distension. The possibility of concealed abruption was considered and ARM was done to accelerate labour, but liquor was clear. As the distension and vomiting increased, surgical opinion was taken. Paracentesis was done but minimal blood stained ascitic fluid was obtained. Erect X-ray abdomen and repeat USG was advised. Before these investigations could be done, patient delivered a dead baby. She worsened after delivery with continuous vomiting and persistent abdominal distension and absent bowel sounds. Copious bilious aspirate was obtained through the Ryle's tube. Considering a strong possibility of a surgical pathology, patient was taken up for laparotomy. Gangrene of the entire length of jejunum and ileum was noted. There was mesenteric twist of 3 turns with thrombosis of superior mesenteric artery and vein. This was a case of small bowel volvulus (Fig. 2). Despite knowing the grave prognosis, jejuno-ileal resection was done with duodenostomy and ileostomy. Though the patient survived for 5 days after surgery, she succumbed to sepsis.



Fig. 2: Gangrene of full length of small bowel with normal postpartum uterus

Case 6: 23 year old married woman was admitted to surgical casualty with pain abdomen and vomiting. On examination, vitals were stable. Abdomen was slightly tender with guarding and rigidity. There was no obvious distension. Patient was kept nil by mouth and put on IV fluids. As she gave h/o one and half months of amenorrhoea, UPT was done and was positive. Hence, obstetric opinion was sought. Scan was done and it revealed empty uterus but an ill-defined mass was noted in the right adnexa with some free fluid in the POD. Possibility of ectopic was suggested in view of positive UPT. Pt was taken over by OBG department. B-HCG was sent and a consideration of conservative management vs methotrexate vs laparotomy was being made. B-HCG was 1100 and before the plan was finalized, patient was sent for a repeat scan the subsequent day which revealed longitudinal three line and railway track appearance of worms in the dilated intestinal loops. On transverse section, "target" or "bull's eye" appearance was seen (Fig 3). She was a case of sub-acute intestinal obstruction by round worm infestation. She was started on tab pyrantel palmoate. Her symptoms were relieved with conservative management with iv fluids and keeping her nil orally for 72 hours. Retrospectively, the patient gave history of passage of worms in the stools and vomitus earlier. 3 days later, an intrauterine gestational sac was noted on scan and the patient continued her pregnancy uneventfully.

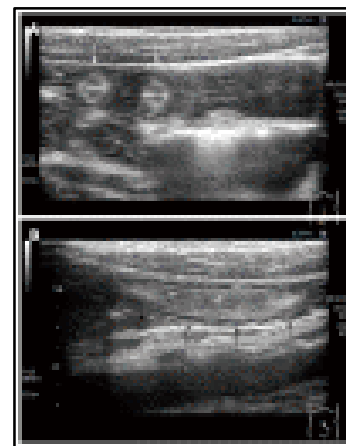


Fig. 3: Ultrasound appearance of Ascaris (round worm) in the intestinal lumen



Fig. 4: Ileal perforation.

Case 7: Primi was admitted at 24 weeks gestation with pain abdomen, fever and burning micturition. Scan revealed hydronephrosis and a healthy foetus. Urine routine showed 5-6 pus cells. Antibiotics were started for urinary tract infection but 6 hours later, patient had 2 episodes of vomiting and developed abdominal distension. Erect X-Ray abdomen revealed gas under the diaphragm. A diagnosis of intestinal perforation was made and patient was taken up for laparotomy. An ileal perforation of 1X1 cm was noted with unhealthy edges (Fig. 3). Resection anastomosis was performed. The WIDAL report which came a day later was positive. Patient recovered well. At term, she underwent LSCS for CPD with a good maternal and foetal outcome.

Case 8: G2P1L1 was admitted at 16 weeks of gestation with history of fever, pain abdomen and vomiting. She looked toxic and was put on antipyretics, antibiotics and iv fluids. Abdomen was soft but there was slight tenderness in the lower abdomen. Scan was unremarkable except of a healthy foetus. By the subsequent day, patient had guarding and rigidity with abdominal distension. Erect X-ray abdomen revealed gas under the diaphragm. She was taken up for laparotomy and a perforation in the ileum was noted about 10cm from the ileo-caecal junction. The perforation was repaired and the patient recovered though she had wound infection which required hospitalization and antibiotics for three weeks. She underwent regular antenatal check-ups and had a successful vaginal delivery at term.

DISCUSSION: The gastrointestinal tract comprises of the oesophagus, stomach and the small and large intestines. Many of the symptoms of GIT problems like pain abdomen, nausea, vomiting and constipation commonly occur in pregnancy too. Hence, these symptoms are often not given too much importance during pregnancy and this can prove to be fatal at times.¹ The above case series highlights this fact. Majority of the GIT pathologies especially, bowel perforations can be easily picked up by erect X-ray abdomen but even this simple investigation is often not advised on time with the fear of radiation risk to the foetus. This can lead to a significant delay in diagnosis and treatment. Though ultrasound is a reasonably good tool to pick up features of bowel perforation⁶ and obstruction, USG could not pick up any GIT pathology in our case series.

Pregnancies with oesophageal varices have a reasonably good outcome compared to other GIT problems. This is

because there is not much delay in referral once a patient presents with hematemesis. A review of 160 pregnancies in patients with oesophageal varices was done. Among them, 53 women had cirrhosis and 83 women had oesophageal varices with non-cirrhotic conditions. The pregnancy and delivery outcome was favourable with prompt care.⁷ A total of 41 pregnancies in 24 women with extra hepatic portal vein obstruction were studied in a referral hospital in Calcutta. 17 women had moderate-to-severe anaemia and five women had pancytopenia. Variceal bleeding occurred in ten women during pregnancy, which was managed successfully with endoscopic sclerotherapy in eight women and endoscopic variceal ligation in two women. 39 out of 41 pregnancies resulted in vaginal deliveries. They concluded that preconception evaluation of the state of varices prior to each pregnancy and their ligation are important aspects of counselling.⁸ A successful feto-maternal outcome is achievable with multidisciplinary backup in a tertiary care centre. In another study, 7 patients were studied.⁹ 2 patients needed variceal banding multiple times and 3 had thrombocytopenia. All patients were delivered by LSCS.⁹ All the three patients in our study had a favourable outcome with two delivering vaginally. A good liaison between the obstetric and surgical gastroenterology team ensured a favourable outcome.

There are very few articles reported on peptic ulcer perforations in pregnancy. The diagnosis is often made late in pregnancy with quite devastating consequences. Paul et al. described a case of perforated peptic ulcer in pregnancy with survival of mother and child. Up to that time, only 5 cases of maternal survival following perforation of a peptic ulcer were recorded.¹⁰ Papa Essilfie et al have reported a case of perforated duodenal ulcer which was recognized quite late but the patient recovered after repair of the perforation by an omental patch.¹¹ In our study, the septic ascites occurring due to stomach perforation was misdiagnosed as polyhydramnios repeatedly on scans. Hence, by the time, laparotomy was performed, patient was already in sepsis and succumbed.

The risk of bowel obstruction during pregnancy increases as the uterus enlarges and extends into the upper abdomen with advancing gestation. Adhesions are the most common causes of the obstruction, followed by volvulus and intussusception.¹² Though volvulus is more common during pregnancy than in the non-pregnant state, its occurrence is a rare entity with very few reported cases.¹³ It occurs mostly in the third trimester and puerperium and obstetricians must be aware that all abdominal conditions can occur despite the pregnant condition. Clinical suspicion of the presence of obstruction, timely surgical opinion and aggressive intervention are required to decrease the morbidity and mortality of this rare complication of pregnancy. Dilated fluid filled bowel loops can be identified on ultrasound though it was missed in our case. Shantajit et al have described a case of small bowel volvulus very similar to our case but the patient survived due to timely laparotomy.¹⁴ There again, the pre- op diagnosis was a probable rupture uterus and hence early laparotomy was done.

Intestinal obstruction by a bolus of worms is the most common surgical emergency caused by ascaris and it is quite common in India and other developing countries.¹⁵ Obstruction can be acute or subacute. Plain radiographs reveal both distended loops of intestine and also worms. Characteristic sonographic findings of intestinal ascariasis are as follows: a "winding highway" or "parallel lines," a "railway track" or "3-line" or "4-line" signs on longitudinal scans, a "target" or "bull's eye" appearance on transverse scans, and a "zig-zag sign", which indicates that the live worm shows characteristic slow, pendular, non-directional movements. These findings were picked up in our patient only on the review scan.^{16,17} Majority of the patients respond to conservative management with iv fluids and nasogastric aspiration for 48-72hrs.¹⁵ Though albendazole or mebendazole are the first line drugs, pyrantel palmoate is the drug of choice in pregnancy. Our patient also improved with conservative management. Laparotomy is indicated if obstruction is not relieved and massaging of the worms towards the colon is usually done. Bowel resection and anastomosis is only required if there is perforation or gangrene.^{15,16}

Perforations of the bowel due to typhoid fever are still common in the developing countries. Other causes of bowel perforation include diverticulitis, appendicitis, trauma, ulcerative colitis etc. The diagnosis and management of typhoid perforation can be challenging particularly those occurring during pregnancy or in the puerperal period. In a study in Nigeria,¹⁸ 43 cases of typhoid perforation were noted among which three perforations occurred in pregnancy and one in puerperium constituting 9.3% of all cases of perforation. The main symptoms they presented with were fever, abdominal pain and abdominal distension. One of our patients also presented in the same manner. Wound infection rates were 48.8% which correlates with our study. The Nigerian study had a high mortality rate as 2 of the 4 pregnant women died and the rate of foetal loss was also high. But in our study, the maternal and foetal outcome was good probably because of high clinical suspicion and timely intervention. Hence it is important that fever in pregnancy should be investigated early and treated adequately. Also abdominal pain should not be dismissed simply as due to physiological and anatomical changes in pregnancy until after thorough evaluation. Although abdominal X-rays are generally contraindicated in pregnancy, they must be performed when there is suspicion of gastrointestinal perforation to assess the presence of pneumoperitoneum. Ultrasonography could be useful as an initial diagnostic test to determine, in various cases the presence and, sometimes, the cause of the pneumoperitoneum. The main sonographic sign of perforation is free intraperitoneal air, resulting in an increased echogenicity of a peritoneal stripe associated with multiple reflection artefacts and characteristic comet-tail appearance.⁶ In both our cases, USG was not able to diagnose perforation.

CONCLUSION: Reaching an accurate diagnosis of a gastrointestinal pathology and administering appropriate management can be difficult in the presence of an on-going pregnancy. The importance of involving specialists from other disciplines (multidisciplinary care) cannot be overemphasized. Symptom overlap between normal pregnancy and a gastro-intestinal pathology is often the cause for delay in seeking a surgical opinion. Hence, awareness among obstetricians about potentially grave gastrointestinal tract pathologies in pregnancy, high index of clinical suspicion, prompt diagnosis (including radiological investigations) and timely intervention including laparotomy, when indicated will help to reduce maternal and fetal morbidity and mortality

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