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Duodenal Perforation in a Lady with Twin Gestation and Severe Preeclampsia

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Abstract:

We present a case where the clinical manifestation of a duodenal perforation was masked by preeclampsia during the initial workup. A 22 year G2A1, 32 weeks pregnant female presented with symptoms of impending eclampsia and blood pressure of 190/120 mm Hg. Emergency cesarean section was done for failed induction. Subsequently, she developed subacute bacterial peritonitis leading to acute renal failure and disseminated intravascular coagulation. On post-operative day 4, the abdominal wound dressing was stained with greenish yellow discharge when the possibility of a perforated viscus was made. Laparotomy was done on day 6 and a perforation was seen on the anterior part of duodenum. Being vigilant to make an early diagnosis and intervention can reduce the maternal morbidity and mortality associated with duodenal perforation which is a rare occurrence during pregnancy.

Key words: Duodenum, Pregnancy, Pre-Eclampsia, Hypertension, Cesarean Section, Peritonitis.

Introduction

Medicosurgical disorders during pregnancy create certain special issues to be dealt with pertaining to diagnosis as well as management. Acid peptic disease during pregnancy is one such condition. It can present either as gastroesophageal reflux disease(GERD) or peptic ulcer disease(PUD). GERD with symptoms of dyspepsia and heartburn occur in 80% of pregnant women [1]. Unlike GERD the incidence of PUD during pregnancy is not known as esophagogastroduodenoscopy(EGD), which gives a confirmatory evidence of the disease is hesitantly used in pregnancy. But many studies support a decrease in overall incidence of PUD during pregnancy [2]. Peptic ulcer disease can present as an emergency with perforation of an ulcer or hemorrhage. Duodenal perforations usually present with complaints of sudden onset severe abdominal pain, abdominal distension and vomiting. Clinical signs of guarding, rigidity and rebound tenderness might be absent in pregnancy due to loss of tone of abdominal wall muscles. The incidence of duodenal perforation during pregnancy is not known. We hereby report a 22 year old pregnant lady with signs and symptoms of impending eclampsia and was later diagnosed to have duodenal perforation.

Case Report

A 22 year pregnant lady of South Indian origin with obstetric score of G2A1 presented to the obstetric

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emergency unit of our hospital at 33 weeks of twin gestation with complaints of pedal edema since 1 month, vomiting for last 1 week, epigastric discomfort since 2 days and headache since 1 hour. She was referred with a blood pressure of 190/120 mmHg. Her first trimester history was suggestive of hyperemesis gravidarum. Examination revealed blood pressure of 180/130 mmHg with bilateral pitting pedal edema. Abdomen was overdistended and abdominal wall edema was present. Multiple fetal parts were felt and two fetal heart sounds were heard with difficulty. She was admitted and managed as a case of impending eclampsia. Patient was started on antihypertensive, prophylactic anticonvulsant and antenatal steroids for fetal lung maturity. Non stress test of both twins was reassuring. Her investigations revealed elevated levels of uric acid, LDH and creatinine with urine showing albuminuria of 3+. By about 12 hours of admission labor was induced due to further elevation in the serum creatinine levels. She received cervical priming agents followed by oxytocin. Caesarean section was done after 36 hours when cervix did not show progressive changes and intrauterine death of one twin was detected. Twin 2 had a stillbirth and massive maternal ascites was noted during the procedure.

On post-operative day 1, abdominal distension was noted with abdominal scan showing thickened bowel loops, moderate pleural effusion and massive ascites. The surgeons were consulted and ascitic fluid analysis was done. However, her ascitic fluid analysis showed no growth of bacteria though the neutrophils had a major proportion. Blood biochemistry revealed serum hypoproteinemia. She was managed conservatively on antibiotics and analgesics. Blood pressure readings were between 140/100 to 150/100 mmHg. On post-operative day 3 mental disorientation was noted which was followed by fall in the blood pressure of the patient. She was shifted to the intensive care unit and started on artificial ventilation due to deranged arterial blood gas analysis. Noradrenaline drip was started to support her blood pressure. Her renal function tests had further deteriorated and coagulation profile was noted to be deranged. Hence, a diagnosis of subacute bacterial peritonitis leading to septicemia and acute renal failure was made. She underwent hemodialysis and received platelet and fresh frozen plasma transfusions. Patient developed fever on the 4th post-operative day and also greenish yellow discharge was seen from the pfannensteil wound when the possibility of a viscus perforation was considered. Surgical exploration was done under grave risk consent. Laparotomy revealed a perforation in the anterior wall of the first part of the duodenum, interbowel adhesions and bile stained ascitic fluid. Primary closure of the perforation was done followed by an omental patch. Following laparotomy she succumbed to resistant septic shock on the 4th post-operative day.

Discussion

Surgical emergencies during pregnancy are a rare occurrence. To come to such a diagnosis requires a treating doctor to be watchful to suspect a diagnosis which is not a routine occurrence in obstetrics. Complicated peptic ulcer disease can present as an emergency during pregnancy although rare. The general consensus is that there is a decrease in incidence of PUD during pregnancydespite conflicting reports in the literature [2]. Way in 1945, it was found that the secretion of gastric acid varies inversely with the concentration of the gonadotrophic hormone present at the same time in the urine [3]. Also due to the effect of estrogen, increased levels of diamine oxidase (histaminase) is seen during pregnancy. This enzyme breaks down the histamine that is responsible for the release of hydrochloric acid from the parietal cells in the stomach [4]. Other plausible factors are nutritious diet, rest, avoidance of smoking, alcohol and use of antacids [5]. Peptic ulcer disease can get complicated when it presents with hemorrhage, perforation or stricture formation.

The incidence of duodenal perforation is more in the older age group and commonly in the females. But the exact incidence during pregnancy is not known.

In 1966, Robert M.Baird in his review quoted 17 cases of duodenal perforations during pregnancy. All the patients who were conservatively managed died and there were no maternal deaths in those who had a simple closure of the perforation [6]. Infant mortality was also significantly less in those patients who were managed surgically. Paul *et al* in their literature review described 14 cases of perforated duodenal ulcer in which all women lost their lives [7]. About twenty cases of duodenal perforation during pregnancy have been reported prior to our case [7-9].

Our patient presented with signs and symptoms of impending eclampsia with twin gestation at 32 weeks of pregnancy who later was diagnosed to have a duodenal perforation after cesarean section for failed induction. This case is reported as it highlights certain clinical dilemma in the management of duodenal perforation during pregnancy. Foremost is the association with preeclampsia. The patient presented with complains of epigastric discomfort and vomiting which also are the symptoms of a perforation. But with high blood pressure, the clinical diagnosis was severe preeclampsia and patient was managed accordingly. No cases reported so far have noted this association. Among the reported cases this is the second case with twin gestation. The exact point in time when perforation could have occurred could not be traced in our case. Abdominal wall edema and distended abdomen due to twin gestation could have masked the classic signs of a perforation if it had occurred prior to cesarean section. Similarly analgesics and H_2 receptor blockers used post operatively could have masked the classic presentation if perforation had occurred post operatively. To evaluate the abdomen by an erect abdominal X- ray which would have been diagnostic of a perforation in any other patient was not favoured due to the false positive picture of air under diaphragm following cesarean section leading to delay in diagnosis.

Conclusion

The diagnosis of a perforated ulcer during pregnancy is often made late with devastating consequences. This case is hence reported to remind that the rare occurrence of duodenal perforation during pregnancy can lead to maternal death and the treating doctor should be vigilant to pick it up early in the course of management.

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