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CASE REPORT

Spontaneous Hemoperitoneum in Third Trimester of Pregnancy—an Enigma

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Abstract
Spontaneous hemoperitoneum in pregnancy is a rare and challenging obstetric emergency. It can present as acute abdomen with features of hypovolemic shock and requires high index of suspicion for diagnosis as various obstetric and non-obstetric causes have similar presenting features. Here we present a case of primigravida at 33 weeks of gestation who presented with acute abdomen, signs of shock and a pathological trace on cardiotocogram. She underwent laparotomy and cesarean section in view of suspicion of abruption placentae. Intraoperatively there was hemoperitoneum of 600 ml with 750 g clots and a small venous bleeder on the posterior surface of the uterus which was secured with hemostatic sutures. Patient got discharged along with the baby on seventh postoperative day. Timely intervention is paramount in reducing maternal morbidity and mortality.

Keywords Hemoperitoneum · Cesarean section · Endometriosis · Hemostasis

Introduction

Hemoperitoneum in third trimester of pregnancy is a rare yet life-threatening event occurring during pregnancy. Though hemoperitoneum in pregnancy is more common during first trimester of pregnancy due to ectopic gestation or ruptured hemorrhagic cyst, same occurring in the later part of gestation and postpartum period has also been reported. Various obstetric and non-obstetric causes such as uterine rupture, abruption, endometriosis, HELLP syndrome-associated liver rupture, splenic vessel rupture, gastric ulcer perforation, and cholecystitis are to be considered [1]. Detection and management of this condition is of utmost importance to reduce the imminent maternal and neonatal morbidity and mortality. In this case report, we present an unusual case of spontaneous hemoperitoneum in the third trimester of pregnancy, its management and outcome.

Case Report

A 28-year-old primigravida presented at 31 weeks of gestation with pain abdomen. This pregnancy was conceived spontaneously, and there was no prior history of uterine surgery, curettage or infertility treatment. On examination, she had pallor, PR was 120/min, BP was 80/40 mmHg, and RR was 30/min. Abdominal examination revealed overdistended tense uterus with fetal heart showing recurrent variable decelerations up to 90 bpm on cardiotocogram. On vaginal examination, cervix was 25% effaced, 2 cm dilated with intact membranes. Ultrasound examination showed a single, live, intrauterine gestation with fundal placenta and absence of retroplacental clots. Concealed abruption was suspected; artificial rupture of membranes done revealed clear liquor following which there was prolonged fetal bradycardia and she was taken up for emergency caesarean section. Abdomen was opened with vertical incision extending from umbilicus to pubic symphysis. Intraoperatively there was 600 ml hemoperitoneum, anterior surface of uterus appeared normal, and baby was delivered uneventfully through a lower segment cesarean section. Male baby of weight 1.89 kg with Apgar of 5–7 was delivered and was shifted to neonatal ICU

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for monitoring and preterm care. Placenta and membranes were normal and complete with no evidence of abruption. There was no angle extension or PPH. After closure of uterine incision, examination of the paracolic gutters revealed approximately 750 gms organized clots (Fig. 1). Few hemorrhagic endometriotic spots were found on the posterior surface of the uterus. Systematic exploration of bladder, bowel, mesentery, liver, spleen and retroperitoneal region showed no bleeding focus. Uterus felt flabby and a look at the posterior surface of uterus revealed a tiny active venous bleeder near the left fallopian tube (Fig. 2) which was missed out earlier probably because the uterus was well contracted and had constricted the vessel. Figure of eight sutures was taken (Fig. 3) with vicryl 1–0 and hemostasis was secured. Uterine tone improved with oxytocic namely oxytocin and single dose of 0.2 mg intravenous methergine. No further operative intervention was required. Intraoperatively patient received 2 packed red blood cells and 4 fresh frozen plasma. Postoperatively, the patient had an uneventful recovery; her hemoglobin on postoperative day 3 was 9.4 g/dl and did not require further postoperative blood and blood products transfusion. Baby was in neonatal ICU for four days in view of prematurity for observation and was subsequently shifted to mother side. Patient was discharged after seven days along with the baby.

Discussion

Spontaneous hemoperitoneum during pregnancy (SHiP) is an obstetric emergency; however, the primary cause for the same is seldom know preoperatively. Most of these patients are managed with diagnosis of unknown cause in 37% followed by abruption, uterine rupture and acute appendicitis in 26%, 11% and 7% of the patients, respectively. SHiP predominantly presents in the third trimester with approximately 61% presenting before labor and one fifth (20%) during intrapartum and puerperal period [1]. Bleeding vessels could be venous, arterial or unknown of which venous is the most common in 80% of the women.

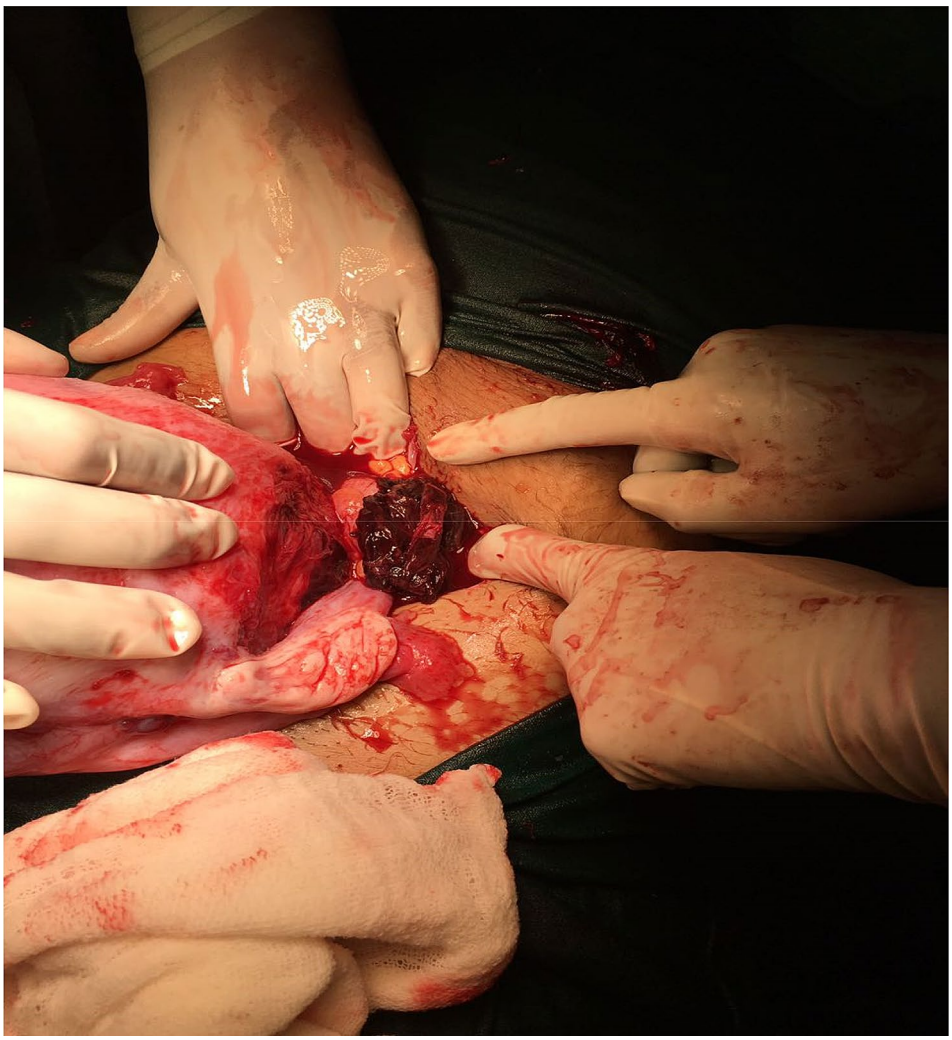

Fig. 1 Hemoperitoneum with clot in the paracolic gutter

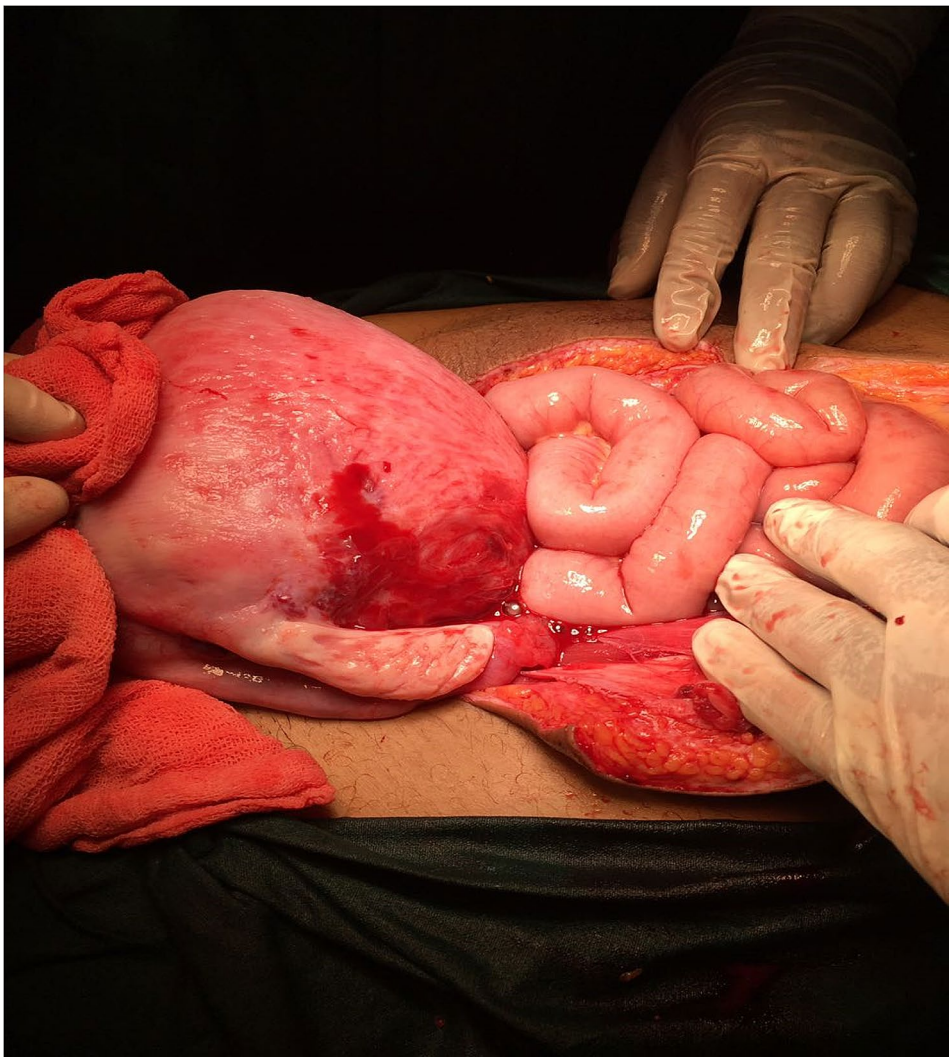

Fig. 2 Superficial bleeder on the posterior surface of the uterus near the left cornua

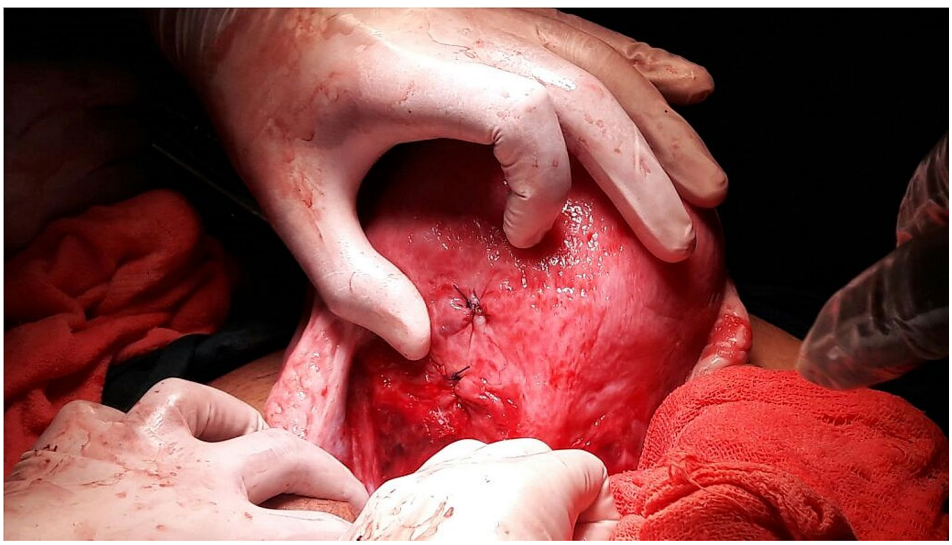

Fig. 3 Hemostatic sutures taken on the bleeder

These bleeders could be located on the serosa of the posterior uterine wall similar to the present case or on broad ligament or utero-sacral ligaments [2]. Due to the unusual location of these bleeding areas, it is difficult to identify their presence before cesarean section.

There has been growing curiosity to identify the cause for development of SHiP. Various hypotheses have been formulated for its development such as sudden changes in the intravascular pressure following coughing, defecation, bearing down; friable vessels due to chronic inflammatory conditions such as endometriosis, lack of valves in the vessels and increased demand during pregnancy. Necrosis and shedding of the decidualized endometriotic lesions intrapartum and postpartum along with hemodynamic changes could contribute to SHiP [1, 3]. Review of case reports by Lier MCI showed that three-fourth of the pregnant women with SHiP had evidence of endometriosis and 25% had deciduosis, whereas among women with hemoperitoneum in postpartal period, deciduosis was noted in 63% of them and remaining had endometriosis [3]. A histo-pathological examination has documented the presence of ectopic decidualization with or without background of endometriosis among women who had SHiP.

Onset of SHiP can vary from 6 weeks of gestation to 30 days postpartum, but most commonly occurs in third trimester. Mean period of gestation at the time of presentation is 32.3 weeks among women with spontaneous conception with no evidence of endometriosis. However, it was observed at 28.6 weeks among women with IVF conception with endometriosis and 30.9 weeks among women with endometriosis but conceived spontaneously [4]. The earliest and most common presenting symptoms are acute pain abdomen in 94.9% of the patient followed by hypovolemic shock (47.5%), fall in hemoglobin (62.7%) and signs of fetal distress in cardiotocograph (40.7%). Imaging modality such as ultrasound or MRI can be employed to note for the presence of free fluid in the abdomen and rule out other surgical emergencies. Free fluid in abdomen can be identified in 62.7% of the cases using imaging. However, with advanced gestation, estimating the exact quantity and origin of bleeding is challenging [5].

As most SHiP are venous in origin, there will be a significant amount of blood loss accompanied by hemodynamic instability. Presence of hypovolemic shock, worsening anemia with signs of fetal distress prompts for surgical intervention. Surgical intervention can range from simple hemostatic suturing of the bleeder to adnexectomy or hysterectomy. Median reported amount of blood loss/hemoperitoneum is 2000 ml, and such profound loss of blood necessitates transfusion of various blood and blood products [4]. Cesarean section at the time of laparotomy is performed if there is evidence of fetal distress. There have been case reports of continuation of pregnancy to term following initial laparotomy for SHiP (15.6%) [9].

Adverse perinatal outcomes such as stillbirth, neonatal death, miscarriage, cerebral palsy and maternal mortality have been reported [1]. However, a recent systematic review found that fetomaternal and perinatal mortality was minimal or absent. Higher rates of preterm cesarean section and prematurity (54.5%) contributed majorly to the maternal and neonatal morbidity [2]. Recurrence of SHiP in the same or subsequent pregnancy has been reported in up to 8.5% of the women [5].

Conclusion

Prompt diagnosis of hemoperitoneum and timely intervention namely laparotomy to identify and arrest the cause of bleeding rather than wasting time to establish the etiology is necessary to prevent morbidity and mortality.

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Declarations

Conflict of interest The author declares no conflict of interest.

Ethical Approval Ethical approval is not required for case reports as per the Institutional Ethics Committee guidelines.

Informed Consent Informed consent obtained from the patients and their identity was not disclosed.

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