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SPONTANEOUS HEMOPERITONEUM BY UTERINE VARICOSE VEIN RUPTURE IN PREGNANCY: A CASE REPORT

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ABSTRACT A 34-year-old pregnant woman, second gravida with previous vaginal delivery, was referred to our hospital at 34 weeks of gestation complaining severe pain abdomen. She was diagnosed with hemoperitoneum with intrauterine foetal demise in ultrasonography. An emergency laparotomy was performed, and intraoperatively it was found that bleeding was caused by ruptured of uterine variceal veins on posterior surface. Lower segment caesarean section was performed and patient delivered a fresh still born male child. Hemostasis with sutures was successfully performed. Spontaneous hemoperitoneum during pregnancy caused by rupture of uterine blood vessels is very rare. Difficult to diagnose and it is a life threatening condition with poor foetal and maternal outcome. It requires rapid and accurate diagnosis and surgical treatment. In most incidences of spontaneous hemoperitoneum during pregnancy, a caesarean delivery is performed along with a simultaneous emergency laparotomy. Alternative methods of diagnosis and management options need to be discussed to improve foetal and maternal outcome.

KEYWORDS : hemoperitoneum, uterine variceal vein, lower segment caesarean section.

INTRODUCTION:

Spontaneous hemoperitoneum during pregnancy is not common. But when it happens it is life threatening with very poor foetal and maternal outcome. In most cases, hemoperitoneum is caused by rupture of venous blood vessels. Apart from obstetric causes, non-obstetric causes of hemoperitoneum during pregnancy include rupture of the maternal umbilical vein, rupture of the splenic arterial aneurysm, liver rupture, and rupture of liver hemangioma or metastasis. Obstetric causes include uterine scar rupture after corneal pregnancy surgery, rupture of uterine vessels, and uterine rupture due to previous uterine surgery and placenta accrete syndrome[1]. Spontaneous rupture of uterine vein varices is very uncommon, and the prevalence rate is estimated to be approximately at 1 in 10,000 births. The most common locations documented are broad ligament (78.3%), the posterior surface of the uterus (18.3%), and the anterior uterus (3.3%)[2]. Rupture of surface uterine blood vessels is the most common form of hemoperitoneum during pregnancy, particularly during the third trimester[3]. Hemoperitoneum during pregnancy can be treated surgically or conservatively if diagnosed early before rupture by uterine vein embolisation. Most previously reported cases describe the use of hemostasis after a cesarean section. Here we report a pregnant woman with hemoperitoneum caused by spontaneous blood vessel rupture on the uterine surface with intrauterine foetal demise with shock was managed with emergency exploratory laparotomy.

Case Report

A 34-year-old pregnant woman, second gravida, was referred to the Government Medical College, Nagpur Obstetric Emergency Department at 34 weeks of gestation complaining of abdominal pain. She was a registered antenatal case at rural hospital with multiple visits. The onset of pain was sudden, referring to right shoulder. On examination, patient was severely pale. Pulse was 120 beats/minute. Blood pressure was 90/60 mmHg. Per abdomen, abdomen was tense, tender and distended. Fundal height was not felt. Foetal heart sound was not audible. Per speculum, os was closed with no bleeding per vagina. Ultrasound showed intrauterine foetal demise with gross hemoperitoneum. Blood and blood products were urgently issued. Patient was shifted immediately for exploratory laparotomy and emergency caesarean section was performed. A preterm fresh stillborn male child was delivered. There was evidence of ruptured uterine variceal vein on posterior wall on right side. Compression sutures were taken over the bleeding vessel. Haemostasis was achieved and secured. Patient received 2 units of packed red blood cell. Post operatively patient recovered well and was discharged on day 5.

DISCUSSION

Hemoperitoneum caused by rupture of uterine blood vessels during pregnancy is very uncommon. Very few cases have been reported in literature. According to a 1950 report on a study in the United States, the maternal mortality due to hemoperitoneum during pregnancy was 49%. With the advancement of obstetric emergency care, the mortality rate has decreased to 3.6% due to medical advancements such as cardiopulmonary resuscitation, availability of ultrasonography, safe anaesthesia, surgical procedures and availability of blood products[3]. Hemoperitoneum caused by rupture of uterine blood vessels during pregnancy is very rare. In addition, if the uterine muscle is contracted due to increased pressure in the inferior vena cava and iliac vessel resulting from the anatomical effects of pregnancy, the blood pressure in the intra-uterine vessels might be sufficiently elevated to induce rupture[2]. In this case report, the patient felt a sudden onset pain at 34 weeks of gestation with development of hypovolemic shock.

Hemoperitoneum during pregnancy requires rapid diagnosis to prevent mortality of the mother and foetus[4]. In addition, labor pain from pushing during the second phase of delivery and can mask the other clinical manifestations of hemoperitoneum[5], which makes diagnosis difficult. We performed a literature search in Medline and PubMed using the key words uterine vessel rupture, spontaneous, hemoperitoneum, and pregnancy, to find papers published in the past 10 years. The causes and management of spontaneous hemoperitoneum post second trimester were reviewed (Table 1)[2-13]. A total of 11 cases ranging in gestational age from 28+5 weeks to 37+5 weeks were reviewed. In most cases, the mothers complained of abdominal pain without vaginal bleeding. They were diagnosed with either preterm labor or labor pain and were treated with tocolytics or labor was induced for delivery. The patients complained of worsening pain, with extreme palor and low blood pressure and tachycardia. Placenta abruption and/or ruptured uterus was suspected as the patient had unstable vital signs and fetal distress or demise. Other uterine ruptures or hemoperitoneum due to unknown causes were treated with an emergency laparotomy. In most of the cases found in the literature, a cesarean section was performed along with a simultaneous emergency laparotomy. In all the cases, the

cause of bleeding was rupture of the uterine vessels, except in one patient who had an unknown cause of bleeding. In most of the cases prior to 34 weeks of gestation, hemostasis was performed after the baby was delivered by cesarean section. According to a case report by Vellekoop et al.[7], hemostasis was successfully performed using a clip because the bleeding originated from the left broad ligament and the utero-ovarian vein. The case report in this study involved bleeding from the uterine fundus and broadly distributed blood vessels on the uterine surface in addition to high blood pressure of the uterine blood vessels. In one of the cases bleeding was stopped by percutaneous embolization. Therefore, it was very difficult to stop the bleeding because post-suturing bleeding occurred at each suture site. Increased vessel pressure is the most commonly identified cause of uterine blood vessel rupture during pregnancy. Therefore, the use of compression sutures can effectively achieve hemostasis. For cases of hemoperitoneum before 34 weeks of pregnancy, hemostasis is conducted following preterm delivery by cesarean section. However, when the bleeding occurs in vessels around the adnexa and on the anterior surface of the uterus, it might be necessary to perform hemostasis first. Careful exploration should be performed first to determine the source of bleeding and then hemostasis should be performed, rather than performing hemostasis after a cesarean section. In addition, because a sufficient visual field is necessary for accurate exploration, a lower midline incision is preferred over a transverse incision. In the case of a pregnant woman complaining of sudden abdominal pain without vaginal bleeding, a differential diagnosis is necessary to exclude obstetrical emergencies and differentiate hemoperitoneum. Because hemoperitoneum during pregnancy is a very rare disease, currently no clear medical treatment guidelines exist. For preterm cases before 34 weeks of pregnancy, if hemostasis can be safely achieved after careful exploration and consideration of the patient and fetus, the pregnancy can be maintained so that complications from premature birth can be reduced.

Table 1. Review Of Cases Being Reported

Case	GA at Dx	Bleeding site	Management	Outcome
Nakaya et al. (2011)[5]	28+5	Superficial varicose vein	Emergency cesarean section	1,140 g AS 1 (1 min) → 5 (10 min)
Giulini et al. (2010)[6]	33+2	Varix (posterior wall of the left broad ligament)	Emergency cesarean section	2,110 g AS 3 (1 min) → 7 (10 min)
Diaz-Murillo et al. (2014)[2]	37	Uterine superficial varix (left uterine horn)	Laparotomy cesarean section	Fetus ok
Vellekoop et al. (2001)[7]	25	Vein (left broad ligament, utero-ovarian vein)	Explo-laprotomy	2700g
Zhang et al. (2009)[3]	29	Uterine varix (posterior surface of the right uterine fundus)	Emergency cesarean section	Fetus ok
Zhang et al. (2009)[3]	35	Vein of the uterus right side	Explo-laparotomy, cesarean section	2,580 g AS 9 (1 min) → 9 (5 min)
Zhang et al. (2009)[3]	30	Left uterine cornu	Explo-laparotomy, cesarean section	1,075 g AS 4 (1 min) → 7 (5 min)
Lim et al. (2014)[8]	37	Varicose vessels on uterus surface	Emergency cesarean section	1,730 g AS 5 (1 min) → 9 (5 min)
Doger et al. (2013)[4]	32	Right uterine vessel	Explo-laparotomy, cesarean section	1,760 g AS 8 (1 min) → 9 (5 min) 1,730 g AS 8 (1 min) → 9 (5 min)
Wu et al. (2007)[9]	32+6	Superficial vessel (posterior serosal surface of the uterus)	Emergency cesarean section	Fetus ok
PalaciosJaraquemada et al. (2009)[10]	22+5	Myometrial and placental rupture in the right vesicouterine region	Laparotomy	1,700 g AS 7 (1 min) → 9 (5 min)
Roche et al. (2008)[11]	33	Right uterine surface vessels, right uteroovarian ligament	Explo-laparotomy, cesarean section	Two demised fetuses
Koifman et al. (2007)[12]	37+5	No evidence of active bleeding	Emergency cesarean section	2,650 g AS 2 (1 min) → 8 (10 min)
Shi et al. (2014)[13]	33	No evidence of active bleeding	Explo-laparotomy	2,390 g AS 9 (1 min) →10(5 min)

Conflict Of Interest

No potential conflict of interest relevant to this article was reported.

REFERENCES

1. Salama S, Nizard J, Camus E, Ville Y. Spontaneous haemoperitoneum after the second trimester of pregnancy. Diagnosis and management. Eur J Obstet Gynecol Reprod Biol 2009;142:82-3.
2. Diaz-Murillo R, Tobias-Gonzalez P, Lopez-Magallon S, Magdaleno-Dans F, Bartha JL. Spontaneous hemoperitoneum due to rupture of uterine varicose veins during labor successfully treated by percutaneous embolization. Case Rep Obstet Gynecol 2014;2014:580384.
3. Zhang Y, Zhao Y, Wei Y, Li R, Qiao J. Spontaneous rupture of subserous uterine veins during late pregnancy after in vitro fertilization. Fertil Steril 2009;92:395.e13-6.
4. Doger E, Cakiroglu Y, Yildirim Kopuk S, Akar B, Caliskan E, Yucesoy G. Spontaneous rupture of uterine vein in twin pregnancy. Case Rep Obstet Gynecol 2013;2013:596707.
5. Nakaya Y, Itoh H, Muramatsu K, Otome M, Kobayashi Y, Hirai K, et al. A case of spontaneous rupture of a uterine superficial varicose vein in midgestation. J Obstet Gynaecol Res 2011;37:1149-53.
6. Giulini S, Zanin R, Volpe A. Hemoperitoneum in pregnancy from a ruptured varix of broad ligament. Arch Gynecol Obstet 2010;282:459-61.
7. Vellekoop J, de Leeuw JP, Neijenhuis PA. Spontaneous rupture of a utero-ovarian vein during pregnancy. Am J Obstet Gynecol 2001;184:241-2.
8. Lim PS, Ng SP, Shafiee MN, Kampan N, Jamil MA. Spontaneous rupture of uterine varicose veins: a rare cause for obstetric shock. J Obstet Gynaecol Res 2014;40:1791-4.
9. Wu CY, Hwang JL, Lin YH, Hsieh BC, Seow KM, Huang LW. Spontaneous hemoperitoneum in pregnancy from a ruptured superficial uterine vessel. Taiwan J Obstet Gynecol 2007;46:77-80.
10. Palacios-Jaraquemada JM, Fiorillo A, von Petery F, Colaci D, Leguizamon G. Uterine repair and successful pregnancy after myometrial and placental rupture with massive haemoperitoneum. BJOG 2009;116:456-60.
11. Roche M, Ibarrola M, Lamberto N, Larranaga C, Garcia MA. Spontaneous hemoperitoneum in a twin pregnancy complicated by endometriosis. J Matern Fetal Neonatal Med 2008;21:924-6.
12. Koifman A, Weintraub AY, Segal D. Idiopathic spontaneous hemoperitoneum during pregnancy. Arch Gynecol Obstet 2007;276:269-70.
13. Shi Q, Zhou HG, Liu XR, Li JP. Spontaneous hemoperitoneum with intrahepatic cholestasis during the third trimester of pregnancy. Int J Gynaecol Obstet 2014;127:297-8.