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Enormous placenta percreta bleeding in a twin pregnancy: a case report

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Abstract

Background Hemorrhage is the most important cause of death in pregnant mothers around the world. One of the causes of severe and fatal bleeding is placenta percreta, which is not easily controlled despite hysterectomy, due to placental invasion of the pelvic organs, and can cause coagulation disorders and maternal death. In placenta percreta cases, it is impossible to establish hemostasis with the usual methods.

Case presentation The patient was a 34-year-old Gravida 3 Para 2 Living 2 Afghan woman. She had twins at 35 weeks of pregnancy. She was hospitalized due to placenta percreta and urinary retention. The patient was a candidate for emergency cesarean hysterectomy because of the nonreassuing non-stress test of the fetuses. When the hysterectomy was performed, despite the total hysterectomy, severe uncontrollable bleeding continued from the pelvic floor and vaginal cuff. Bilateral hypogastric vessels were ligated, but the bleeding continued, and the hemodynamic status of the patient was deteriorating. Finally, the surgical team decided to pack the pelvis, which saved the patient's life.

Conclusions Packing the vagina and pelvis at the same time in the enormous bleeding in placenta percreta cases is a straightforward and low-cost solution that can save the patient's life.

Keywords Placenta, Accreta, Increta, Percreta, Placenta previa, Postpartum hemorrhage

Introduction

The invasion of the myometrium by the fetal trophoblast is known as placenta accreta. The trophoblast's invasive depth is used to distinguish three placental subtypes: placenta accreta, placenta increta, and placenta percreta. The placenta percreta determines that the villi entirely penetrate the uterine wall, reaching the serous layer and even the adjacent pelvic organs, such as the bladder, rectal wall, and pelvic arteries [1, 2]. Placenta accreta occurs in approximately 1 in 2500 pregnancies [3]. Placenta percreta occurs in 5–7% of cases and is less common than other types of placenta accreta. [4–6]. However, the frequency of bladder invasions is unknown. Placenta percreta is more associated with maternal morbidity than the other placenta accreta subtypes [1, 2, 7]. It is associated with uterine curettage, multiparity, Asherman syndrome, placenta previa, and cesarean sections (CS). The primary causes of the elevated risk of severe postpartum bleeding are placenta accreta, increta, and percreta. Thus, different methods were identified for reducing postpartum bleeding [8].

Placenta percreta can be treated conservatively, keeping the placenta in situ and waiting for its later resolution (which carries a significant risk of bleeding and infection)

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or with a cesarean hysterectomy (which eliminates future fertility) [9, 10]. A hysterectomy is often necessary due to the significant bleeding that is frequently experienced [11]. Therefore, placenta percreta can be challenging and fatal to the mother. In this study, we report a life-threatening emergency and rare case of placenta percreta, and its complications following postpartum hemorrhage and hysterectomy. Despite the total hysterectomy, severe uncontrollable bleeding continued, so the bilateral hypogastric vessels were ligated. However, the bleeding continued, and the patient became hemodynamically unstable. We describe our management of this complex and challenging circumstance.

Case presentation

Our patient was a 34-year-old Gravida (G) 3 Para (P) 2 Living (L) 2 Afghan woman pregnant with twins at 35 weeks of pregnancy. She was referred to the perinatology clinic of our hospital with abdominal pain and urinary retention from 10 days ago. In the patient's documents, there was an episode of urinary tract infection in the current pregnancy. Also, she had high blood pressure 3 months ago and was treated with methyldopa daily. She had a past medical history of two cesarean sections, anemia, and preeclampsia (in the last pregnancy).

The patient had many risk factors for placenta percreta, such as a history of cesarean section, placenta previa, and multiparity. Also, she came to our clinic with a delay for the termination of pregnancy, so it made her situation more complicated.

Clinical findings

Her vital signs on admission to our hospital were a blood pressure of 140/90 mm Hg, heart rate of 110 beats per minute, respiratory rate of 22 per min, and temperature of 37 °C. In physical examination, she had tenderness in the lower abdomen without rebound tenderness.

Diagnosis assessment

The patient's pregnancy was a dichorionic diamniotic twin pregnancy, and it occurred spontaneously. The placenta of the first fetus was posterior and previa. She was hospitalized at the 28th week of pregnancy because of iron-deficiency anemia (Hb = 7.9 g/dL) and received two packed cells. In her admission, the color Doppler ultrasound was performed, and the possibility of placenta accreta of the first placenta was suspected. Therefore, a magnetic resonance imaging (MRI) of the placenta was requested for further investigation. Unfortunately, the patient did not do the follow-up MRI in time. She continued prenatal care and had an MRI with a delay of 1.5 months because of financial issues. She was referred to our clinic with an MRI that demonstrated the placenta had penetrated the bladder and the left lateral and posterior pelvic wall. However, it was not attached to the intestine or abdominal wall.

Moreover, she had symptoms such as abdominal pain and urinary retention, so she was hospitalized as an emergency. The patient had dribbling and could not empty her bladder. During urine catheterization, 5 cc of urine came out, which was hematuria. At the time of admission, the patient had severe oliguria, creatinine of 3.1 mg/dL, blood urea nitrogen (BUN) of 46 mg/dL, AST of 225 U/L, ALT of 279 IU/L, LDH of 1103 U/L, hemoglobin (Hb) of 10.2 g/dL, prothrombin time (PT) of 12.8, partial thrombplastin time (PTT) of 26, and international normalized ratio (INR) of 1. In her urine analysis test, there was blood, many red blood cells (RBCs), and no protein. Due to the nonreassuring non-stress test (NST) of the fetuses, the patient was a candidate for emergency cesarean hysterectomy.

Therapeutic intervention

A surgical team comprised an anesthesiologist, gynecologist, vascular surgeon, urologist, and perinatologist. The decision to insert a ureteral catheter was made before starting the laparotomy, but this procedure was unsuccessful due to severe bilateral ureteral obstruction. Laparotomy started with a midline incision. A classic cesarean section was performed, and two babies were born with good general health and Apgar scores of 9 and 10 at 1 and 5 minutes after birth. Then hysterectomy was performed, but despite the total hysterectomy, severe uncontrollable bleeding continued from the pelvic floor and vaginal cuff. Bilateral hypogastric vessels were ligated, but the bleeding continued, and the hemodynamic status of the patient was deteriorating. Finally, the surgical team decided to pack the vagina and pelvis. Two long gauzes were packed inside the vagina, and four more long gauzes were packed in the pelvic floor, and the peritoneum of the pelvic floor was closed. During the operation, the patient received 2 g of fibrinogen, 6 U of packed cells, 6 U of fresh frozen plasma (FFP), and 6 U of platelets. Due to unstable hemodynamics, she was transferred to the intensive care unit (ICU) and intubated. During the first day after the operation, the patient had anuria and underwent 2-hour dialysis. The patient was extubated 16 hours after the operation.

Follow-up and outcomes

On the second day after the operation, the patient's urination was established and the vaginal long gauzes removed. On the third day after the operation, the patient underwent a laparotomy again, and the long gauzes inside the pelvis were removed. Fortunately,

complete homeostasis was maintained. The patient was discharged after 8 days with good general condition and no complications. She was discharged with a Foley catheter and a tablet of amlodipine 5 mg daily (because of continued hypertension). The following week patient came back to the clinic, and her Foley catheter was removed. After a month, she came back with a chief complaint of flank pain, so we suspected ureter ligation during abdominal surgery; therefore, we ordered a control ultrasound to rule it out. The sonography reported that there was grade 2 hydroureteronephrosis in her left kidney. Therefore, she was admitted to the hospital, and an intravenous pyelogram (IVP) was done. The IVP reported normal pyelocalyceal for both kidneys, so she was discharged with the urinary tract infection treatment.

Discussion

This article described a case of severe and fatal placental percreta hemorrhage after CS and a total hysterectomy that was successfully treated with vaginal and pelvic packing. Massive postpartum bleeding is primarily caused by the placenta accreta spectrum. The placenta is a highly vascular organ, making the situation potentially fatal. Placenta previa and prior cesarean sections are the most frequent risk factors. The additional risk factors include hysteroscopic surgery, uterine curettage, myomectomy, and other types of uterine surgery [12, 13].

According to O'Brien, the maternal mortality rate is up to 7% in women when placenta percreta is diagnosed [8]. It is essential to diagnose placenta percreta early because the physician has enough time to plan for an early delivery, which includes having a multidisciplinary team available, such as obstetrician-gynecologists, anesthesiologists, neonatologists, interventional radiologists, and urologists. Physicians should discuss surgical delivery options, prepare patients for invasive management, and make sure there is an adequate supply of blood products and other supportive therapies [14].

The first-line methods for diagnosing placenta accreta spectrum are ultrasound and magnetic resonance imaging (MRI), with estimated sensitivity and specificity values of 97% and 97% for ultrasound and 94.4% and 84% for MRI, respectively [15]. Our patient suggested doing an MRI urgently, but she delayed due to financial issues, and because of ethical concerns, we could not force the patient to undergo procedures, which caused more complications in this case.

The placenta accreta spectrum is challenging to manage. Instead of trying to separate the placenta after delivery, the Royal College of Obstetricians and Gynecologists (RCOG) suggested leaving it *in situ* and proceeding with either a hysterectomy or conservative care [14]. However,leaving the placenta in place is associated with severe problems over time, mainly bleeding and infections. [16]. Matsuzaki *et al*. suggested that the success rate of conservative management of placenta percreta is lower than that reported for other types of placenta accreta spectrum [17]. I Gde Sastra Winata *et al*. suggested that utero vaginal packing can be used in placental bleeding in placenta previa or placenta accreta. This method is an easy and efficient way to stop bleeding and prevent further surgeries [18]. Also, Ihsan Bagli *et al*. reported that vaginal packing was a simple and helpful method in patients with postpartum hemorrhage [19].

Percutaneous arterial embolization, uterine compression approaches, and pelvic artery ligation are additional conservative treatments for the placenta accreta spectrum. Therefore, complicated uterine rupture, abnormal placental adhesion, and failure of conservative therapy are indications for emergent peripartum hysterectomy. Although there is an increasing tendency toward conservative care, hysterectomy is frequently required in the treatment of abnormal placentation [8].

In this case, after the hysterectomy, there was uncontrollable bleeding continued from the pelvic floor and vaginal cuff. Bilateral hypogastric vessels were ligated, but the bleeding continued, and the hemodynamic status of the patient was deteriorating. Finally, the surgical team decided to pack the pelvis and vagina. Pelvis and vagina packing was a successful treatment for this complicated situation, and our patient survived. In this study, we aimed to emphasize the potential of this simple and efficient packing method as an intervention and the impact it could have on life-threatening hemorrhage in placenta percreta.

Some cases of continued bleeding may not respond successfully to surgical management. In these situations, pelvic pressure packing may be used to have time for hemodynamic stabilization [20]. Previous studies suggested pelvic packing should have been considered in case of life-threatening, persistent bleeding following a hysterectomy. They reported that their patients survived without complications following pack removal [21, 22]. This treatment is simple to use, safe, quick, and effective in stopping bleeding. However, there are some controversial approaches to this method due to concerns about infection and bleeding [23]. Therefore, because of this gap of knowledge, the authors recommend a follow-up study that explores the outcomes of using pelvic and vaginal packing in larger cohorts or in other types of abnormal placentation to assess its generalizability and long-term safety.

The limitation of our study was that the operation was done in an emergency and stressful setting, so we did not have enough time to take any images to add to this case report. In addition, she was from Afghanistan, so there were some cultural and language issues. We tried to explain the importance and complications of the placenta percreta situation, but she refused to undergo MRI imaging in time.

Conclusion

In cases of placenta percreta, it is not possible to establish hemostasis with usual methods such as suturing due to the invasion of the placenta into the pelvic organs. In these cases, prolonging the operation time will have no result other than increasing the probability of coagulation disorders such as disseminated intravascular coagulation (DIC) and the death of the patient. Packing the vagina and pelvis at the same time is a straightforward and low-cost solution in these cases, which we present in this case study. This method can save the patient's life and has no complications for her.

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MF and MH conceived designed the work, interpreted the data, and drafted the work. MA and BM conceived and designed the work. MN drafted and revised the work. All authors have approved the submitted version.

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Declarations

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Not applicable.

Consent for publication
Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Competing interests
The authors declare that they have no competing interests.

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