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Our Experience of Childbirth Complications: A Case of Placenta Percreta

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Abstract

We present our own experience management in pregnant women with placenta percreta. For the timely diagnosis of placenta accreta or placenta percreta, it is recommended to conduct ultrasound and Magnetic Resonance Imaging (MRI) studies in women with placenta previa and a history of caesarean section. Objective signs of placenta accreta, identified before delivery, make it possible to make the right decision about delivery and minimize complications in the mother and newborn. A coordinated interdisciplinary approach to these complex cases and early resuscitation with blood products are critical factors in the successful management of patients affected by this disease.

Keywords

Placenta Percreta, Pregnancy, Normal Delivery

1. Introduction

Abnormal invasion of the placenta or Placenta Accreta Spectrum (PAS) is one of the rare obstetric disorders that endanger the life of the mother and the fetus. PAS is a severe obstetric complication that may arise following a previous caesarean section (CS) or uterine surgery and is characterized by abnormal adherence of the placenta to the uterine wall [1] [2] [3]. Histopathologically, it is characterized by partial or complete absence of the decidua basalis or the Nitabuch layer of the decidua, which results in abnormal attachment of the chorionic villi to the myometrium [1].

The placenta is inseparably attached to the myometrium with varying depths of invasion. Increasing depths of invasion are associated with increased rates of complications which can be life-threatening and life-altering. PAS is associated with antenatal, intrapartum, and postpartum complications that have increased

maternal and fetal morbidity and mortality [1] [2] [3].

PAS is considered a life-threatening obstetric condition that can lead to maternal death due to uncontrolled bleeding, unplanned CS, hysterectomy, and other complications resulting from abnormal invasion of the placenta into neighboring organs [2]. According to the literature, the frequency of PAS has been constantly increasing over the past few decades throughout the world, and has become an important obstetric problem in medical practice [3]-[11].

To reduce maternal morbidity and mortality, elective cesarean hysterectomy in a tertiary care hospital with a multidisciplinary care team is considered to be the safest and most common treatment approach for PAS diagnosed before delivery [9] [12]-[17]. However, PAS may be diagnosed after delivery, when the placenta or placental tissue fails to separate from the uterine wall. In an attempt to obtain an empty uterine cavity, systematic manual separation of the placenta from the uterine wall is usually performed. This forcible manual blunt dissection can induce massive hemorrhage, which may result in hysterectomy [2] [18] [19] [20].

There are three levels of abnormal placental attachments according to the profundity of invasion, namely Placenta accrete—the uterine deciduas is absent and the chronic villi attaches to the myometrium directly. Placenta increta-the chronic villi invades into the myometrium. Placenta percreta-the chronic villi encroach through the myometrium and may permeate to close by organs [2] [3]. Placenta accreta occurs approximately in 1 out of 7000 pregnancies [4]. Out of these, about 75% - 80% are placentas accrete, about 17% are placenta increta and remaining is placenta Percreta [5].

Risk factors associated with placenta percreta are previous cesarean section, multiple pregnancies, advanced maternal age, placenta praevia, dilatation and curettage, endometritis and repetitive abortions [6]. In comparison to the rest of uterine cavity, the lower uterine segment proximal to the cervical canal contains relatively less decasualized tissue.

In women with placenta previa undergoing cesarean delivery, the frequency of PAS increased with an increasing number of cesarean deliveries as follows [7]: First cesarean birth—3 percent; second cesarean birth—11 percent; third cesarean births—40 percent; fourth cesarean births—61 percent. In the absence of placenta previa, the frequency of a PAS in women undergoing cesarean delivery was much lower [7]: First cesarean birth—0.03 percent; second cesarean birth—0.2 percent; third cesarean birth—0.1 percent; fourth or fifth cesarean birth—0.8 percent. In addition to previous cesarean delivery, uterine curettage or hysteroscopy surgery, myomectomy, endometrial ablation may result in further localized deciduas defect and consequently abnormal placentation. It is important to note that in a multivariate analysis, placenta previa appeared to be an independent risk factor for PAS (odds ratio [OR] 54; 95% CI 18 - 166), while prior uterine surgery was not (OR, 1.5, 95% CI, 0.4 - 5.1) [8]. In this case, though there was previous history of caesarean section, the site of invasion was not the lower segment or previous scar but at the fundus. We therefore assume abnormal or

excessive trophoblast invasion to uterine fundus as the pathophysiology of aberrant placentation. Interestingly, the sex ratio associated with PAS favors females, which is opposite to the normal sex ratio in the general population, which favors males [9] [10].

Delivery of the fetus is always by a CS by 35 to 36 weeks of gestation as further prolongation of pregnancy could lead to catastrophic obstetric hemorrhage. An obstetric hysterectomy is often performed in the presence of massive obstetric hemorrhage [4] [5]. But certain percentage of women with PAS undergoes emergency hysterectomy [6] [7]. PAS is closely associated with placenta previa, and this may give rise to one or more episodes of antepartum hemorrhage that require prolonged hospital stay [6] [7]. A series of stressful events may occur from the point of diagnosis till discharge, which may traumatize the patient and their family members [8] [9].

The aim of this case report is to share our experience in the management of placenta percreta and to review the literatures.

2. Case Report

A 41-year-old patient N.N. was admitted to the "Maternity House of the Erebouni medical center" of Yerevan, Armenia at 23 weeks of gestation with burdened obstetric history, scar on the uterus after caesarean section, and complaints of pain for 1 day and decreased urine output for 2 days. There was no history of bleeding per vaginum, trauma, surgical procedure or medical illness.

From the obstetric history, it is known that in 2012 she gave (male) birth at 40 weeks by caesarean section because of fetal distress, in 2014 she gave (female) birth at 39 weeks by caesarean section. Her obstetrical history in 2013, 2015 and 2016 was marked by a spontaneous second trimester miscarriages at 24 weeks followed by fever for 1 - 2 weeks. She subsequently underwent a uterine evacuation of retained products. The procedures were uneventful. This was the sixth pregnancy of the patient. According to history data, menarche at the age of 13 years, lasting to 5 - 6 days, in 28 - 30 days, moderate, painless, regular.

She registered the current pregnancy with the antenatal clinic at 12 weeks of pregnancy. Pregnancy was uncomplicated at this point. Indicators of clinical and biochemical studies were within normal limits.

During pregnancy, ultrasound examination was performed twice: at the 19th and the 23th weeks. A transabdominal ltrasound scan at 23 weeks revealed the localization of the placenta along the anterior wall of the uterus without ultrasound signs of AIP. The lower edge of the placenta reached the level of the internal os of the cervix. The structure of the myometrium in the area of the uterine scar was unremarkable.

Ultrasound examination of the placenta, located on the anterior wall of the uterus at the term of 19 weeks showed that its lower edge also reached the level of the internal os of the cervix. Placenta thickness was 19 mm, 0 degree of maturity according to the classification of Grannum P. *et al.*, 1979. Along the ante-

rior wall of the uterus at a distance of 39 mm above the postoperative scar, a site was visualized similar to abnormal invasion of the placenta in the form of deep penetration of chorionic villi into the myometrium up to the serous membrane (placenta increta). Of the main, elaborated US markers of abnormal placental invasion, our observation noted the absence of a hypoechoic zone between the placenta and the myometrium (thinning of the myometrium) and an impairment of the normal architectonics of the vessels of the placental site. The presence of vascular lacunae, the expansion of the areas of intervillous spaces in the suprabasal region, an uneven contour of the maternal surface of the placenta, was not revealed in our study.

For an objective comparison of ultrasound signs of the presence and absence of visualization of the presence of AIP, we present the following ultrasound scans and MRT of our patient (Figure 1).

On examination at admission: the uterus is enlarged, respectively to 23 weeks of pregnancy. The position of the fetus is longitudinal. The presenting part is located high above the entrance to the small pelvis. The area of the postoperative scar on the uterus is painless.

3. Diagnosis on Admission

The pregnancy is currently at 23 weeks. She has a burdened obstetric history. There is a scar on the uterus resulting from a previous cesarean section. Given the full-term pregnancy, the woman's refusal to give birth through the vaginal birth canal, it was consultatively decided to manage labor by caesarean section in a planned manner.

N. N. underwent the following surgery (Figure 2): Laparotomy; Cesarean section. A non-live preterm neonate weighing 690 g, 36.5 cm length, and 0-0 points on the Apgar scale. During the operation, an area of PAS with dimensions of 8 × 10 cm along the anterior wall of the uterus was found.

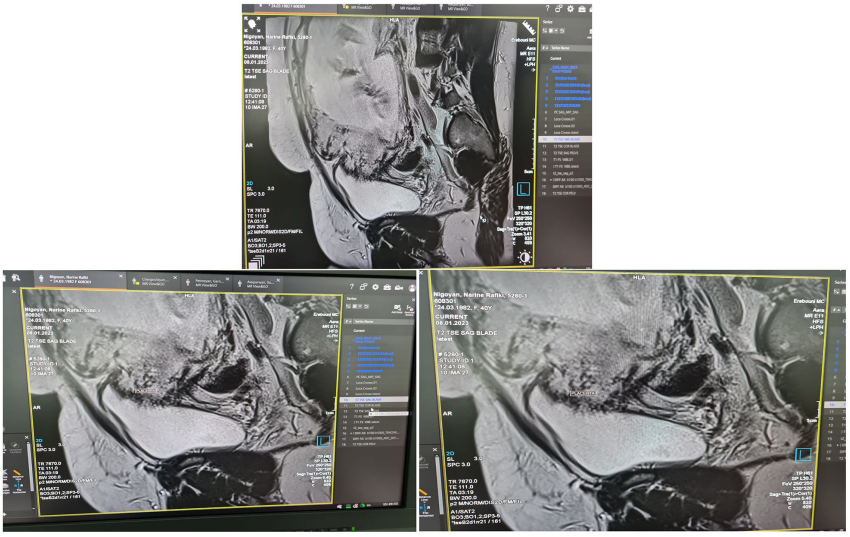

Figure 1. Ultrasound scans and MRT of patient.

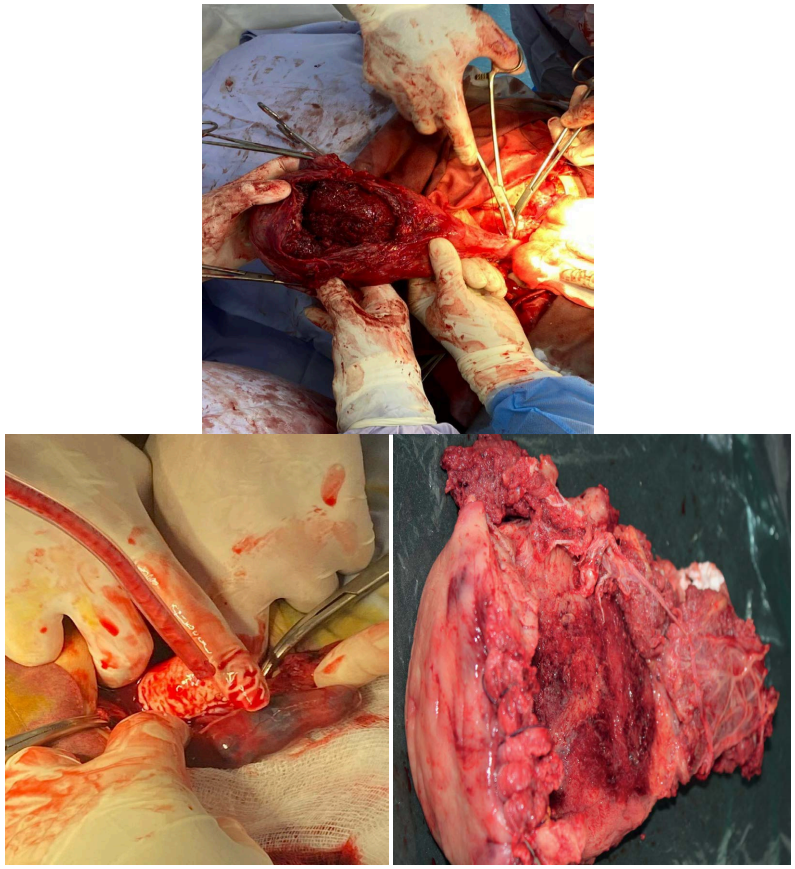

Figure 2. Patient during surgery.

Due to confirmed PAS, the uterus was removed with adnexa as the placenta did not deliver spontaneously. The PAS also involved the uterine fundus. The uterine serosa was breached by the placental invasion at the posterior aspect of the fundus and which was bleeding profusely. No other abdominopelvic organs were involved. Placenta percreta was suspected and in view of the profuse bleeding, blood and blood products were procured immediately and timely decision for hysterectomy was made. Subtotal hysterectomy was done with placenta in situ. The total blood loss was 2 liters.

The patient received a transfusion of erythrocyte mass and fresh frozen plasma. Further, the patient received infusion-transfusion therapy, thromboprophylaxis, and antibiotic therapy as prophylaxis for postoperative infection. On the seventh postoperative day, patient N.N was discharged from the hospital after an uncomplicated recovery. She was discharged with additional thromboprophylaxis. Histopathological findings confirmed the absence of placental basal plate and presence of trophoblastic tissue in the myometrium and serosa thereby confirming the diagnosis of placenta accrete.

4. Conclusion

Median laparotomy, separation of adhesions, small cesarean, extirpation of the uterus with appendages, catheterization of the ureters, cystoscopy, and drainage

of the abdominal cavity are procedures performed to address PAS, an extremely serious condition. However, its etiological and pathogenic mechanisms are not fully understood. For the timely diagnosis of placenta accreta, it is recommended to conduct ultrasound and MRI studies in women with placenta previa and a history of caesarean section. Objective signs of placenta accrete identified before delivery, make it possible to make the right decision about delivery and minimize complications in the mother and newborn. A coordinated multidisciplinary approach to these complex cases and early resuscitation with blood products are critical factors in the successful management of patients affected by this disease and ultimately reduce maternal morbidity and mortality, and improve perinatal outcomes.

Ethical Issues

The patient gives consent for this case report.

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Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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