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Clinical Challenge in the Diagnosis and Management of Placenta Accreta Spectrum with Subsequent Hysterectomy in Four Women in Albania

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Abstract

Placenta increta is a serious condition in pregnancy that occurs when the placenta grows deep into the walls of the uterus occupying the uterine myometrium. Abnormal placental implantation is one of the main causes of maternal morbidity and mortality, three variants are known: accreta, increta, and percreta. If the condition is diagnosed early in pregnancy, then it is necessary for a caesarean delivery followed by a hysterectomy. The diagnosis of this condition is made through histopathological examination when all other conservative treatment has failed, and after a good imaging examination where MRI plays an important role. Placenta previa increta refers to a condition where the absence of decidua and the presence of chorionic villi inside the myometrium is noticed during microscopic examination. We report two gravida female patients presented as obstetric emergencies due to prolonged bleeding, during their third trimester. Placenta increta and other conditions of this spectrum are considered to be very challenging obstetric conditions that may be life threatening for both the mother and the baby. Regular check-ups during pregnancy, especially in mothers with placenta previa, previous cesarean deliveries, or other uterine surgeries and early prenatal diagnosis, are essential to control and avoid complications, and optimize maternal and fetal outcomes.

Keywords: *Placenta Previa Spectrum; Hysterectomy; Vaginal Hemorrhage; Placenta Increta*

Introduction

The development of placenta begins during the implantation of blastocysts, around gestational week twelve and it continues to grow throughout the pregnancy. The placenta serves as the main source of fetal nutrition and is essential in other developmental aspects.

During a normal, uncomplicated pregnancy, placenta should attach itself to the inside wall of the uterus, surrounding the fetus [1]. However, an abnormal attachment of the placenta can jeopardize embryonic and fatal development. The most frequently encountered implantation abnormalities are represented by placenta previa, which furthermore is classified by the depth of the penetration of placental villi into the myometrium as placenta accreta, increta and percreta [1].

Placenta previa increta is a condition where the chorionic villi are attached firmly to the myometrial layer of the uterus. Many definitions have been discussed to explain how this pathology occurs. In the past, it was thought that a biological defect of the trophoblast would lead to pathological invasion of the placental tissue, beyond the physiological decidual-myometrial junction zone. The current concept of this pathology reveals that a defect in the endometrium-myometrial interface leads to abnormal decidualization of the corresponding uterine area with the main risk factor being endometrial scarring [1,2].

Endometrial scarring is the most important risk factor in developing placenta increta [3]. Women with a previous history of cesarean sections, endometrial curettage, previous placenta previas, are at substantial risk for developing placenta previa-increta during any stage of pregnancy [4].

Massive obstetric bleeding is the main complication of placenta previa increta, therefore early diagnosis and management is crucial in preventing fatal outcomes [2].

Case Presentation

We identified four cases of female patients admitted to the obstetric emergency who required immediate evaluation and management.

Case 1

A 30-year-old woman gravida 3, para 2, in the 34th week of pregnancy, presented to the obstetric emergency with vaginal bleeding. She had an irregular antenatal follow-up, with the last visit during her 25th week of gestation. The last two weeks she had noticed irregular vaginal bleeding and spotting, while during the last two days the bleeding was more intense so she reached the emergency department. Ultrasound findings during her last visit suspected placenta previa increta. Clinically she appeared distressed, blood pressure was 90/60 mmHg, profuse vaginal bleeding and secondary anemia were noted. Fetal heart rate was 170 bpm. An emergency Caesarean section was performed. She gave birth to a well appearing 2.5 kg boy. An urgent decision for total hysterectomy was made. The uterus was brought to the pathology laboratory for further histopathologic examination (Figure 1).

Figure 1: *Ultrasonography findings at gestational week 34 consistent with placenta increta.*

Case 2

A 37-year-old female, gravida 3 para 2, presented to the emergency department in the 38th week of pregnancy. She had two previous Caesarean sections, due to fetal malpresentations during delivery. Upon arrival blood pressure was 85/60 mmHg, and hgb values of 9.7 g/dl. Fetal heart rate was 175 mbp. Immediate caesarean delivery was performed. Twenty-four hours postpartum she developed hemorrhage. She was managed medically followed by dilation and curettage. Six days after the delivery her hgb value was 7.6 g/dl. She continued to have vaginal bleeding. A decision for total hysterectomy was made (Figure 2).

Figure 2: *Macroscopically, in all cases was found placental tissue adherent to the uterine wall, thin myometrium, and areas of necrosis.*

Case 3

A 28-year-old female, gravida 3, para 2, presented to the obstetric department for a planned caesarean delivery in her 39th week of pregnancy. Her pregnancy has been uncomplicated to date. She had two previous elective caesarean deliveries, whereas the last one was 15 months ago. Preoperative ultrasound examination revealed a massive placenta covering the lower half of the uterine body. Parts of the myometrium appeared thin and the boundary between the myometrium and placenta was indistinct. Following delivery, systolic blood pressure dropped rapidly to approximately 60 mmHg and she required rapid blood transfusion. Emergency total hysterectomy was performed as the placenta appeared firmly attached to the uterine wall causing massive hemorrhage.

Case 4

A 32-year-old female gravida 4 para 3, presented to the emergency department in her 23rd week of pregnancy due to vaginal bleeding. She had a history of three lower-segment cesarean sections. She had some episodes of spotting in her first trimester, otherwise her pregnancy has been uncomplicated to date. Abdominal ultrasound revealed enlarged tender uterus measuring 22 cm, and no fetal heart rate.

Placental tissue that infiltrates the endometrium up to half of the myometrium in the presence of placental membrane, cluster visualizations with blood clots and foci of interstitial hemorrhage. In different foci of the myometrium between smooth muscles small islands with trophoblastic cells are observed. The case was signed out as abnormal placental implantation in the uterus (Figure 3).

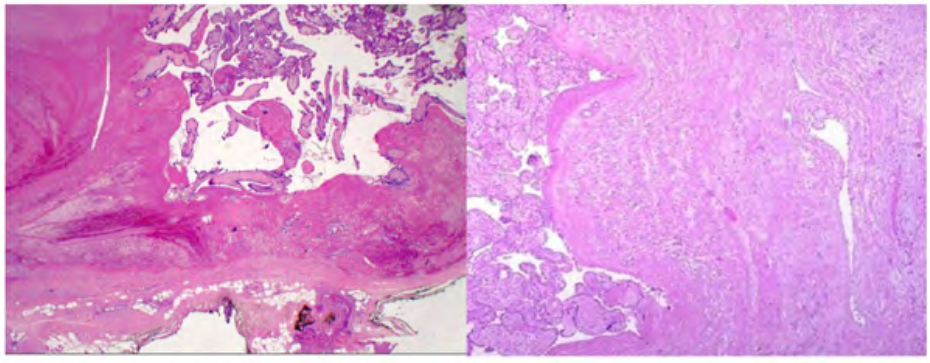

Figure 3: *Histopathological specimen.*

Discussion

Placenta increta is an unusual condition that belongs to the Placenta Accreta Spectrum (PAS), an abnormal adherence of the placenta in whole or in parts to the myometrium of the underlying uterine wall, and it is classified into three categories that represent the range of pathologic invasiveness as Placenta accreta (superficial myometrium without decidua), Placenta increta (Into myometrium) and Placenta percreta (along the uterine wall and adjacent organs) [5,6].

In this article, we present four placenta increta cases of four young women (between 28 and 37 years old) with vaginal bleeding at 28, 34 - 35, 38, and 39 weeks of pregnancy. The prevalence of placenta increta is about 15% of all PAS patients, generally in advanced maternal age (35 years or more) and with a history of previous cesarean delivery as the most common risk factor in 61% when there are three previous cesarean surgeries [1,2]. In three cases, the patients had previous caesarean surgery, and the other one had an uncontrolled follow-up, all the patients had three or more previous pregnancies. As the pathogenesis of PAS is still not well understood, one of the most accepted theories is that a previous uterine trauma, such as a cesarean, can cause a defective decidualization in the uterine scar that allow an abnormal adhesion of the anchoring villi of the placenta to the myometrium and further trophoblast invasion [7]. We want to enhance the importance of prenatal screening as a routine for early detection of PAS [8].

The clinical manifestation of placenta increta is a massive obstetric hemorrhage during the delivery in two cases (1, 3), the bleeding initiated before the delivery at 34 - 35 and 38 weeks forcing them to go to the emergency room. In both cases, the management was a hysterectomy, one during an urgent caesarean, and the other, six days after the caesarean. In the other two cases, the diagnosis was made with ultrasound control one at the 39th week before an elective caesarean and the other one at the 23rd week during a pregnancy control. Ultrasound is the first modality for pregnancy diagnosis alterations. Usually, in the first trimester, when a gestational sac is in a lower uterine segment or near a cesarean scar, PAS should be considered. However, in most cases, the diagnosis is not made until the delivery [9]. In an ideal situation, the evaluation must be made between 18 and 24 weeks of gestation, and the most common ultrasonography findings are multiple placental vascular lacunae, with a sensibility and specificity of 75% and 95% respectively, loss of the clear zone (normal hypoechoic area between placenta and myometrium), abnormalities in the bladder line, and decreased myometrial thickness [9,10]. The diagnosis in three of our cases was made by ultrasound, and the findings were the loss of the clear zone because it was indistinct or irregular.

The decision between conservative and non-conservative management depends on the balance between fertility and associated risks with uterine preservation as in cases of focal accreta, posterior or fundal placenta accreta, where manual removal or surgical excision

to repair the defect is feasible [6,8]. However, caesarean hysterectomy is the most acceptable procedure in cases of massive obstetric hemorrhage and other complications such as infections, recurrence, or hemorrhage in future pregnancies and even risk of death [3,10]. In our cases, the decision to perform an urgent cesarean hysterectomy was made based on hemodynamic instability, bleeding, and the fetal heart rate (in two cases). In one case expectant management was made, however, six days after the cesarean delivery the hysterectomy was performed due to vaginal bleeding and the decrease in hemoglobin levels.

Conclusion

The risk of placenta increta seems to be higher in women who had a previous caesarean delivery, or other uterine surgeries. With these case presentations we want to highlight the importance of maintaining a high index of suspicion of abnormal placental invasion and making preparations for delivery accordingly. Antenatal diagnosis of placenta increta is associated with reduced levels of hemorrhage and a reduced need for blood transfusion. In our cases, all women diagnosed with placenta increta had a hysterectomy; early diagnosis would allow for the appropriate surgical planning as well as adequate counselling of the women involved. Further research is required in order to determine the most sensitive and specific antenatal diagnostic techniques. Prenatal diagnosis is paramount as it provides an opportunity to make a management plan for delivery, reducing maternal and fetal mortality and morbidity.

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