Placenta Accreta: Challenging Diagnosis and Management. A Case Report and Literature Review

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Introduction

Placenta accreta is a life threatening condition occurring when the entire placenta, or part of it, attaches to the myometrium of the uterine wall. The maternal and fetal morbidity and mortality from placenta accreta are considerable and associated with high demands on health resources [1]. A morbidly adherent placenta includes placenta accreta, increta and percreta (which our patient in the following case had) and is differentiated by the depth it penetrates through the decidua basalis into and then through the myometrium. For ease of description the term placenta accreta will be used in this discussion as a general term for all of these conditions.

As a result of the invasion of the placenta into the myometrium, there is a greater risk of heavy bleeding and haemorrhage and thus the need for blood transfusions and often, a caesarean hysterectomy to control the significant blood loss. A positive correlation can be seen between the incidence of placenta accreta and the rising rate of caesarean section [1]. Damage to the uterus created by surgery leaves patients susceptible to the acquisition of future placenta accreta. The occurrence of placenta previa, uterine scarring and increased maternal age are risk factors in contributing to the incidence of placenta accreta and this ultimately poses a significant burden on health resources. A multidisciplinary approach is necessary in managing this hard hitting complication.

Case

We would like to highlight a rare case of a 36 year old lady in her first pregnancy with a history of laparoscopic myomectomy. The diagnosis of the placenta accreta was missed on a series of antenatal scans. She was known to have a low lying placenta since her 20-week scan. At 33+4 she presented with a mild episode of PV bleeding. She received two doses of steroids and a repeat scan was arranged for her. The latter scan confirmed that the main lobe of the placenta was right lateral with the edge 18 mm away from the internal os. In view of her clinical history and symptoms, she had another appointment to be scanned by Fetal- Maternal consultant. The purpose of the scan was to confirm the final location of the placenta and exclude any concern of placenta accreta. Caution was exercised in lieu of her previous myomectomy surgery in case the placenta or part of it was found to be posterior and close to her posterior uterine scars.

The scan reported normal fetal growth, Doppler and liquor volume. The placenta was reported: left lateral succenturiate lobe reaching the internal os but the main bulk of the placenta is right lateral and high. There was no evidence of vasa previa. Her surgeon advised a planned CS and discussed the risk of posterior uterine wall rupture, obstetric haemorrhage, the need of blood transfusion and the risk of hysterectomy as a life saving procedure if needed as a result of the low lying placenta.

Subsequently, this patient presented to A&E in haemodynamic shock with IUFD at 36 weeks gestation. As a result of placenta percreta, the chorionic villi had perforated through the posterior uterine wall and was continuously bleeding to the abdominal cavity with an excess of 1500 mL of blood. She ended sadly with a caesarean hysterectomy after she was admitted to ITU for several weeks.

We highlight the value of ultrasound and further imaging modalities such as MRI to assist in making the accurate diagnosis in high-risk patients with previous uterine scars, together with appropriate training and multidisciplinary input to improve patient outcomes.

Discussion

Placenta accreta is one of the most serious obstetric emergencies. A high index of suspicion should be held with mothers who have significant risk factors despite having a normal ultrasound scan. As demonstrated by our case, it is possible to have placenta accreta go undiagnosed leading to devastating maternal and fetal complications. Prognostic factors aside from previous caesarean section include all previous myometrial damage from myomectomy, manual removal of the placenta, complicated uterine curettage, and leiomyomas [3].

First line imaging modalities include gray-scale ultrasound and color Doppler for the diagnosis of placenta accreta. MRI is used as an adjunct tool to improve sensitivity when sonographic examination is equivocal or when the placenta cannot be reliably visualized [6]. Overall, gray scale ultrasonography is sufficient to diagnose placenta accreta, with a sensitivity of 77–87%, specificity of 96–98%, a positive predictive value of 65–93%, and a negative predictive value of 98 [3]. The use of power Doppler, color Doppler, or 3D imaging does not significantly improve the diagnostic sensitivity compared with that achieved by gray scale ultrasonography alone [3]. The 2D ultrasound criteria for the diagnosis of placenta accreta in at-risk patients are obliteration of the retroplacental echolucent zone, abnormal prominent placental lacunae and thinning or disruption of the hypertrophic uterine serosa-bladder interface [5]. These lacunae may result in the placenta having a “moth-eaten” or “Swiss cheese” appearance [3], as seen in Figure B.

The value of diagnosing placenta accreta before delivery is to maximize planning and assemble a multidisciplinary team. Ideally when delivering, there should be a Consultant grade Obstetric surgeon and anesthetist. If possible you may include input from pelvic surgeon such as a gynecologic oncologist, maternal–fetal medicine specialist, neonatologist, urologist, vascular surgeon, and interventional radiologist to optimize the patient’s outcome[3]. There are a many considerations for management depending on the severity of hemorrhage, including life-saving hysterectomy. The RCOG considers Cell salvage, or autologous blood transfusion, to be appropriate in patients with estimated blood loss over 1500mL [1]. Ensuring sufficient blood for transfusion and early transfer to a tertiary care center must be considered. There is some controversy regarding the benefit of interventional radiology with balloon catheterization to reduce blood loss [2]. Postpartum hemorrhage and maternal and fetal demise are of such high risk in these patients that early diagnosis and planning is the key to improved-outcomes.

Conclusion

Advances in ultrasound have led to improved ability to diagnose this condition. We suggest there may be benefit to dual visual modalities such as ultrasound and MRI in evaluating high risk women with previous uterine damage. Evaluation of patients in high-risk groups, a multidisciplinary team approach, referral to tertiary center with expertise in MRI scan should be considered for accurate antenatal diagnosis and improved outcome.

References

[5] Figure A: Multiple vascular lacunae (arrows) within the placenta at 18 weeks gestation. This finding has been reported with high sensitivity and a low false-positive rate for placenta accreta

http://dx.doi.org/10.1016/j.ajog.2003.11.004
http://dx.doi.org/10.1016/S0002-9378(12)70129-7
http://dx.doi.org/10.1016/j.ajog.2003.11.004
http://dx.doi.org/10.1016/j.ajog.2003.11.004
http://dx.doi.org/10.1016/j.ajog.2003.11.004
http://dx.doi.org/10.1016/j.ajog.2003.11.004
http://dx.doi.org/10.1016/j.ajog.2003.11.004
http://dx.doi.org/10.1016/j.ajog.2003.11.004

Figure A: http://www.humpath.com/spip.php?article4663
Figure B: E. Berkley, A. Abuhamad. “Prenatal Diagnosis of Placenta Accreta: Is Sonography All We Need?”. J Ultrasound Med 2010 30: 1245-1250.