

Massive haemorrhage secondary to placenta percreta in the first trimester: a case report

H.A. Hamid¹, R. Zulida¹, M. Norhafizah²

¹ Department of Obstetrics and Gynaecology, Faculty of Medicine and Health Science, Universiti Putra Malaysia (UPM), Serdang

² Department of Pathology, Faculty of Medicine and Health Science, Universiti Putra Malaysia (UPM), Serdang (Malaysia)

Summary

Placenta percreta detected in the first trimester is a very rare condition. It is a known obstetric condition leading to serious maternal morbidity and mortality. High index of clinical suspicion and anticipation of placenta percreta is highly essential in early pregnancy as it is difficult to diagnose. The authors report on a patient who presented with heavy pervaginal bleeding in week 9 of pregnancy. Pelvic examination showed a 12-week sized uterus. Ultrasonography revealed a non-viable fetus. The subsequent emergency curettage performed was complicated by massive haemorrhage which required an abdominal hysterectomy performed as a life-saving procedure.

Keywords: Placenta percreta; First trimester; Pregnancy; Miscarriage; Haemorrhage.

Introduction

In general, placenta accreta is a condition defined as abnormal placental adherence in which there is presence of deep penetration of the placenta through the uterine wall. There are three forms of abnormal placentation classified according to the depth of penetration. Placenta accreta is the mild form of abnormal placentation in which placental villi adhere to the underlying myometrium without an intervening layer of deciduas. The other two forms are placenta increta and placenta percreta. Placenta increta shows villous infiltration into the myometrium. As in the present patient, the villi extend through the whole thickness of the myometrium to the serosa that leads to uterine perforation. This condition is known as placenta percreta [1]. It is commonly encountered in third trimester of pregnancy and rarely in early pregnancy.

The authors report an interesting case of placenta percreta in the first trimester that potentially endangered the woman's life, where placenta percreta leads to massive postabortal haemorrhage and uterine perforation necessitating hysterectomy.

Case Report

A 36-year-old woman at nine weeks of gestation in her eighth pregnancy presented with active per vaginal bleeding and abdominal pain. The bleeding began at home about one 'sarong' that was soaked, associated with passing of blood clots. She had significant obstetric history of two previous lower segment caesarean sections (LSCS) and one dilatation and curettage for missed miscarriage. She was a healthy lady with no medical illness.

On presentation, she was pale and hemodynamically unstable with blood pressure of 88/52 mmHg, pulse rate of 110 beats per minute and with a body temperature of 37°C. The abdomen was soft and non-tender. The uterus was not palpable per abdomen. Pelvic examination revealed bulging membrane through a two-cm dilated os of partially effaced cervix with active bleeding. Uterus was of 12-weeks size anteverted, mobile, non-tender, and with no adnexal mass palpable. Her haemoglobin level was 9.8 g/dl with hematocrit of 27.3%. Urine pregnancy test was positive. Ultrasound scan of the abdomen revealed a small fetal pole with no fetal heart activity within a collapse intrauterine gestational sac.

Curettage was performed under general anaesthesia. She was resuscitated with fluid and one pint of packed cells was transfused before the procedure. Profuse bleeding occurred soon after commencing the suction procedure. The bleeding continued profusely despite 80 units of oxytocin, followed by two doses of 250 mcg carboprost, vigorous bimanual compression, and balloon tamponade. A total abdominal hysterectomy was performed in view of persistent bleeding. There was a highly vascularised area at the lower part of the uterus which bulged anteriorly (Figure 1). All other intraperitoneal organs were intact. The total blood loss was estimated at 3,500 millilitres and one cycle of disseminated intravascular coagulopathy (DIC) regime and seven pints of packed cells were transfused in the operation theatre. She was then monitored in intensive care unit (ICU) postoperatively. She was discharged well on day four post-operation.

Grossly, the uterus weighed 131 grams and measured 100 mm from the fundus to cervix and 60 mm bicornu. The uterine cavity was filled with blood clot. There was a perforation noted at the neck of uterus measuring 20 mm in length. Microscopically, the uterine sections showed presence of chorionic villi which adhered to the underlying myometrium without intervening layer of deciduas. In areas there was infiltration of chorionic villi through the whole thickness of the myometrium. Extensive areas of haemorrhage were noted (Figure 2).

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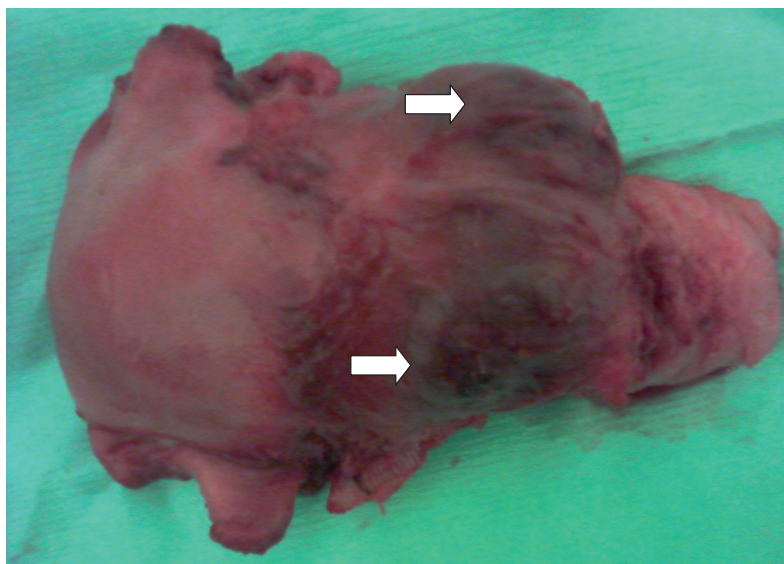


Figure 1. — A hysterectomy specimen shows a large uterus with large bulging haemorrhagic areas at the anterior lower part of the uterus.

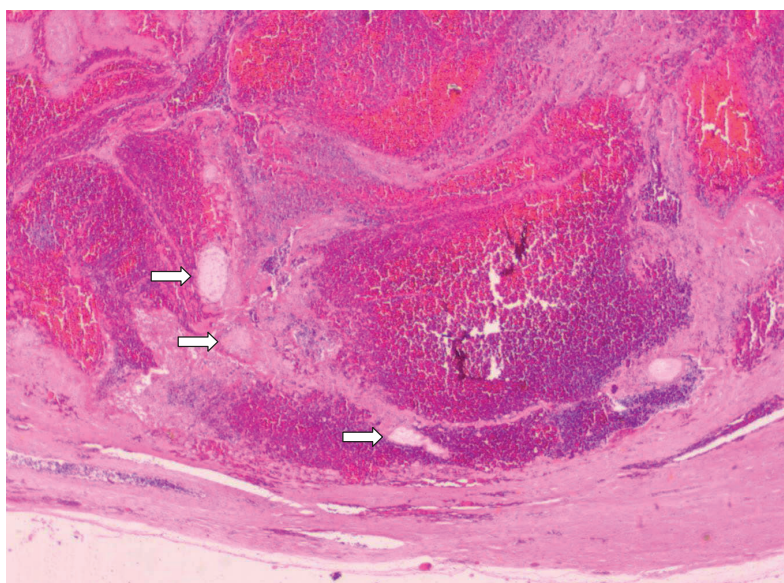


Figure 2. — Chorionic villi infiltration into the whole thickness of the myometrium with extensive areas of haemorrhage. (Hematoxylin and eosin stain. Original magnification x20).

Discussion

Placenta accreta is on the rising trend for the past decade. The increasing incidence of placenta accreta is multifactorial but the most important factor is the increase number of caesarean sections in current obstetrics practice. Review of the literature reported incidence of the disorder of abnormal placentation to vary between one in 540 and one in 93,000 with an average of one in 7,000 pregnancies. [2] Among the three types of abnormal placentation, placenta percreta is the most severe form and very rare even in late pregnancy.

Massive haemorrhage due to placenta percreta is one of the most serious obstetric complications which are more commonly seen in the third trimester classically recognised during an attempt to remove the placenta following delivery of the baby in vaginal birth and caesarean section. Excessive

bleeding is expected if the placenta is forcibly removed. However, it rarely occurs in the first trimester. In a survey of literature, it is usually following surgical management of miscarriages which resulted in profuse per vaginal bleeding which had occurred in this patient. [3-5]

Bleeding from first trimester miscarriage due to placenta percreta is one of the severe obstetric complications and a potentially life threatening condition. Other related abnormal placentation complications resulting in high mortality are organ injury, amniotic fluid embolism, thromboembolism, DIC, multiple organ damage, and sepsis. [1]

The exact etiology of placenta accreta is unknown. However, there are well known risk factors associated with abnormal placentation. An essential factor contributing to this disorder is prior caesarean section. The risk ranges from 3% for patients

with single caesarean delivery and can be up to 40% with the third caesarean delivery, and majority of women with antepartum haemorrhage coexist with placenta previa [2]. Furthermore, the predisposing factors include scarred uterus following uterine surgery, other than caesarean section as myomectomy, endometrial ablation, prior uterine curettage, uterine irradiation, endometritis, uterine leiomyomata, uterine anomalies, advanced maternal age, multiparity, and smoking [4].

The clinical presentation of placenta accreta depends on the severity of the abnormal placental adherence and the site of implantation such as bleeding, acute abdomen, uterine rupture, uterine inversion, bladder invasion, and others. Greatest among them are recognised intrapartum with post- abortion haemorrhage or postpartum haemorrhage and asymptomatic during antepartum period.

Early diagnosis with early intervention is essential to prevent or at least to minimise the complications related to placenta accreta. It is difficult to diagnose placenta percreta that morbidly adhered to the uterus especially in early pregnancy and rarely can be recognised during the curettage procedure. There is still lacking evidence through randomized controlled trial and large cohort studies regarding the diagnosis and treatment. However, there are several imaging technique can assist in the diagnosis of placenta accreta such as ultrasound, computed tomography scan (CT scan) and magnetic resonance imaging (MRI). There is no completely sensitive and specific test for the diagnosis especially in the first trimester. [2, 6-7] However, the sonographic features that might suggest placenta accreta in the first trimester include the presence of sac at lower uterine segment with thin myometrium surrounding it and presence of large irregular lacunae, hypervascularity periplacenta, and dilated intraplacental vessels [2, 7]. The present authors could not perform other imaging modalities as the patient presented with hypovolemic shock.

Essential differential diagnoses in suspected cases of profound bleeding in early trimester include septic miscarriage, cervical ectopic pregnancy, hydatidiform mole, invasive mole or even choriocarcinoma. The gold standard of making the final diagnosis is by histopathological examination (HPE).

The management of placenta percreta is a real obstetric challenge. It should be a combined multidisciplinary team approach in a tertiary centre with appropriate anaesthetic, surgical, and haematological facilities [1, 2]. Successful management depends on immediate blood transfusion therapy and prompt surgical intervention, traditionally with hysterectomy. Conservative managements such as uterine packing, uterine compression sutures, uterine tamponade, and medical therapy using methotrexate has been described as an option especially appropriate for partial placenta accreta with minimal bleeding.

However, with the recent development of diagnostic and treatment modalities, alternative measures of management have shown satisfactory results in control of bleeding as well as preserving the uterus. The alternative management of placenta accreta include uterine or hypogastric ligations, uterine

artery embolisation (UAE), and transcatheter arterial chemoembolisation (TACE). There were few cases of placenta accreta that has been successfully treated with these modalities [8, 9]. In this case the present woman presented with active bleeding and the management was challenging due to damage that might have already existed. High risk informed consent should be taken for hysterectomy as part of the treatment for placenta accreta [4].

Placenta percreta is a serious obstetric condition leading to maternal mortality and severe morbidity. High index of clinical suspicion and anticipation relying on the risk factors are very crucial in optimizing management strategies as an early recognition of the condition may improve the clinical outcome. It provides an opportunity to the obstetrician to deal with the problem in the best way and to manage the obstetric emergency promptly.

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References

- [1] Belfort M.A.: "Placenta accreta". *Am. J. Obstet. Gynecol.*, 2010, 203, 430. doi: 10.1016/j.ajog.2010.09.013.
- [2] Comstock C.: "Antenatal diagnosis of placenta accreta: a review". *Ultrasound Obstet. Gynecol.*, 2005, 26, 89.
- [3] Dahiya P., Nayar K.D., Gulati A.J.S., Dahiya K.: "Placenta accreta causing uterine rupture in second trimester of pregnancy after in vitro fertilization: a case report". *J. Reprod. Infertil.*, 2012, 13, 61.
- [4] Höpker M., Fleckenstein G., Heyl W., Sattler B., Emons G.: "Placenta percreta in week 10 of pregnancy with consecutive hysterectomy". *Hum. Reprod.*, 2002, 17, 817.
- [5] Esmans A., Gerris J., Corthout E., Verdonk P., Declercq S.: "Placenta percreta causing rupture of an unscarred uterus at the end of the first trimester of pregnancy: case report". *Hum. Reprod.*, 2004, 19, 2401.
- [6] Yang J.I., Kim H.Y., Kim H.S., Ryu H.S.: "Diagnosis in the first trimester of placenta accreta with previous cesarean section". *Ultrasound Obstet. Gynecol.*, 2009, 34, 116.
- [7] Wong H.S., Zuccollo J., Tait J., Pringle K.C.: "Placenta accreta in the first trimester of pregnancy: Sonographic findings". *J. Clin. Ultrasound*, 2009, 37, 100.
- [8] Soleymani Majd H., Srikantha M., Majumdar S., B-Lynch C., Choji K., Canthaboo M., Ismail L.: "Successful use of uterine artery embolisation to treat placenta in creta in the first trimester". *Arch. Gynecol. Obstet.*, 2009, 279, 713. doi: 10.1007/s00404-008-0789-y. Epub 2008 Sep 10.
- [9] Takeda A., Koyama K., Imoto S., Mori M., Nakano T., Nakamura, H.: "Conservative management of placenta in creta after first trimester abortion by transcatheter arterial chemoembolization: A case report and review of the literature". *Arch. Gynecol. Obstet.*, 2010, 281, 381.

Address reprint requests to:

H.A. HAMID, M.D.

Department of Obstetric and Gynaecology,

Faculty of medicine and Health Science,

Universiti Putra Malaysia (UPM),

43400 Serdang, Selangor (Malaysia)

e-mail: habibah@upm.edu.my

drbib76@yahoo.com