

The Diagnosis and Management of Placenta Previa

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Introduction

Maternal and fetal morbidity and mortality from placenta previa are considerable¹⁻⁹ and are associated with high demands on health resources. With the rising incidence of cesarean sections combined with increasing maternal age, the numbers of cases of placenta previa and its complications will continue to increase^{7,8,10-14}.

The purpose of this guideline is to address the methods of diagnosing placenta previa and placenta previa accreta and their clinical management in both the antenatal and peripartum periods.

Placenta previa is a condition in which the placental tissue lies abnormally close to the internal cervical os. Four subtypes are generally recognized: Complete or total, in which the placenta covers 360° of the internal cervical os; incomplete or partial, in which 0°-360° of the internal cervical os is covered by placental tissue; marginal, in which the placental tissue abuts but does not cover the internal cervical os; and low lying, in which the edge of the placenta lies abnormally close to but does not abut the internal cervical os.

Etiology and Predisposing Factors

Placenta previa typically occurs as a result of abnormally low implantation. Although no specific cause has been identified to date, this condition has been hypothesized to occur as a result of abnormal endometrial vascularization related to atrophy or scarring from prior trauma or inflammation.

Risk factors for placenta previa include prior placenta previa, prior cesarean delivery, increased maternal age, large placentae (e.g., multiple gestations or erythroblastosis), and a maternal history of smoking^{7, 8, 10-14}.

Diagnosis

Transabdominal sonography (TAS) previously was the test of choice to confirm placenta previa.

Transvaginal sonography (TVS) is safe in the presence of placenta previa, and is more accurate than TAS in locating the placenta¹⁵⁻¹⁹.

Magnetic resonance imaging (MRI) has been reported in the diagnosis of placenta previa where

TAS images have been unsatisfactory²⁰, and has the advantage of being possible without a full bladder, and is an objective test removing operator error. It is particularly useful in imaging posterior placenta²⁰, but has not been subject to comparison with TVS and can only be recommended for use in a research context at this stage.

A reasonable antenatal imaging policy would be to perform a transvaginal scan on all women in whom placenta previa is suspected at their transabdominal level 2 scan to reduce those for whom follow-up will be needed. A further transvaginal scan at 32 weeks would then be appropriate for all women whose placentas encroached on the cervical os at their level 2 scan to follow up of possible placental migration.

Placenta Accreta

Antenatal imaging by color flow Doppler ultrasonography should be performed on women with placenta previa who are at increased risk of placenta accreta.

Management

Inpatient management is still appropriate for women with major placenta previa in the latter part of the third trimester. Any home based care for such women should be conducted within a research context.

The use of cervical cerclage to reduce bleeding and prolong pregnancy is not backed up by sufficient evidence to recommend this practice outside of a clinical trial.

Tocolysis for treatment of bleeding due to placenta previa can rarely be useful in selected cases (subject to consultant opinion, with an available operative theatre available 24 hours-a-day).

However betamimetics were used in the studies to date and as these are known to be associated with significant side-effects, the agent and optimum regime are still to be determined.

Delivery

- The mode of delivery should be based on clinical judgment supplemented by sonographic information. An encroaching placenta, which is within 2cm of the internal os, is likely to need delivery by

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caesarean section especially if it is posterior or thick.

- Blood should be available for the peripartum period. The amount required will depend on the clinical features of each individual case.
- There is no evidence to support the use of autologous blood transfusion for placenta previa.
- The choice of anesthetic technique for caesarean sections for placenta previa must be made by the anesthetist conducting the procedure but there is increasing evidence to support the safety of regional blockade.
- A recent study showed that there was more blood loss and more transfusion requirements in those having general anesthesia, with increased major morbidities as pulmonary embolism.
- Any woman going to theatre with known placenta previa should be delivered by the most experienced obstetrician and anesthetist available. As a minimum requirement, a consultant should be present within the delivery suite. A junior doctor should not be left unsupervised when caring for these women.
- Women with placenta previa who have had a previous caesarean section are at high risk of having a morbidly adherent placenta and should have been imaged antenatally. When placenta accreta is felt to be likely consultant anesthetic and obstetric input are vital in planning and conducting the delivery. Crossed matched blood should be available and other colleagues such as urologists may be on standby to attend if needed.
- All cesarean sections performed in women with placenta previa who have had a previous cesarean section should be conducted by a consultant obstetrician due to the high risk of major morbidity
- Conservative management of placenta previa accreta can be successful and can preserve fertility. This can include elective uterine artery catheterisation in preparation for prophylactic or therapeutic uterine artery embolisation^{21,22}, internal iliac artery ligation and methotrexate therapy²³. But there have been cases of delayed hemorrhage necessitating hysterectomy^{24,25}
- The surgical maneuvers required in the face of massive hemorrhage associated with placenta previa caesarean sections should be performed by appropriately experienced surgeons and calling for extra

help early should be encouraged and not seen as 'losing face'.

- Uterotonic agents may help in reducing the blood loss associated with bleeding from the relatively atonic lower uterine segment²⁶, while bimanual compression, hydrostatic balloon catheterisation or uterine packing²⁷ or even aortic compression can buy time while senior help arrives. Additional surgical maneuvers which may be considered include the B-Lynch suture²⁸, uterine²⁹ or internal iliac artery ligation³⁰, or hysterectomy. Arterial embolisation has been reported³¹ and is useful in selected cases as long as the iliac vessels have not been tied off.

Don't Forget

- Screening for infection before termination of pregnancy and antibiotic prophylaxis to minimize the risk of post abortion infection³²
- Prophylactic antibiotics should be used for caesarean sections³¹, and for manual removal of the placenta.
- Use of antenatal corticosteroids in threatened preterm delivery³³.
- Anti-D immunoglobulin for rhesus negative women who bleed³⁴.
- Thromboprophylaxis for any woman at increased risk of thromboembolism³⁵.

Risk Management

As in all cases of high risk, particular attention should be paid to careful documentation of all issues surrounding clinical discussion and decisions. Names of all clinical staff involved should be recorded legibly and signed in the notes, together with the content of any discussions, advanced directives and decisions.

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