## 8.4 *Optimising the delivery of women with placenta accreta spectrum*

There are no RCTs comparing different surgical approaches for placenta accreta spectrum suspected antenatally. Both conservative and radical surgical approaches can be associated with a high maternal morbidity although the value of an experienced team in a specialist centre decreases the risk significantly.[21,22,135,138,162,163]

Evidence level 4

### 8.4.1 What surgical approach should be used for women with placenta accreta spectrum?

**Caesarean section hysterectomy with the placenta left in situ is preferable to attempting to separate it from the uterine wall.**

C

**When the extent of the placenta accreta is limited in depth and surface area, and the entire placental implantation area is accessible and visualised (i.e. completely anterior, fundal or posterior without deep pelvic invasion), uterus preserving surgery may be appropriate, including partial myometrial resection. [*New 2018*]**

✓

**Uterus preserving surgical techniques should only be attempted by surgeons working in teams with appropriate expertise to manage such cases and after appropriate counselling regarding risks and with informed consent. [*New 2018*]**

D

**There are currently insufficient data to recommend the routine use of ureteric stents in placenta accreta spectrum. The use of stents may have a role when the urinary bladder is invaded by placental tissue (see section 8.4.2). [*New 2018*]**

C

The choice of surgical technique will depend on the position of the placenta, the depth of invasion, and the parametrial extension of the placenta accreta spectrum as assessed by ultrasound and/or MRI before delivery, the visual assessment of the uterus at the time of surgery and the presenting clinical symptoms, i.e. bleeding or no bleeding.[5]

The ACOG recommends planned, preterm caesarean section hysterectomy with the placenta left in situ as removal of a placenta accreta spectrum is associated with significant haemorrhagic morbidity.[165] In cases of high suspicion for accreta during caesarean delivery, the majority of members of the US Society of Maternal-Fetal Medicine (SMFM) and FIGO expert panel proceed with hysterectomy.[157–161]

Evidence level 4

Similarly, in a 2017 systematic review and meta-analysis on the diagnosis and outcome of placenta accreta, an elective or emergency caesarean hysterectomy was performed in 208 out of 232 (89.7%) cases.[143]

Evidence level 2++

A retrospective study of 57 cases of suspected accreta demonstrated significantly reduced short-term morbidity if the placenta is left in place and hysterectomy is performed electively compared with attempting to remove the placenta first.[177] Attempting placental separation risks hysterectomy in up to 100% of cases as also confirmed by other authors.[177,178]

Evidence level 2++

 

A case–control study of 49 women requiring a peripartum hysterectomy for massive haemorrhage, including 20 women presenting with placenta accreta, reported that the use of a vessel sealing device during surgery decreases the estimated blood loss, the need for massive blood transfusions, and does not increase operative time or complication rates.[179]

Evidence level 2+

A systematic review found that uterus preserving surgery resulted in a secondary hysterectomy in 24/77 women (31%), maternal mortality in 2/55 women (4%), subsequent menstruation in 28/34 women (82%) and subsequent pregnancy in 19/26 women (73%).[180] A more recent systematic review showed that uterus preserving surgery is associated with a success rate of 48/76 women (63.2%), a secondary hysterectomy in 23/76 women (30.0%), maternal mortality in 2/54 women (3.7%), subsequent menstruation in 20/37 women (81.1%) and subsequent pregnancy in 21/27 women (77.8%).[181]

Evidence level 2++

A small cohort study has shown that the introduction of the Triple-P procedure [perioperative placental localisation, pelvic devascularisation and placental non-separation] involving delivery of the fetus via transverse uterine incision above the upper border of the placenta, myometrial excision and reconstruction of the uterine wall reduces the rate of hysterectomy, PPH and duration of hospital stay in women with placenta accreta.[182] The incidence of postoperative complications of the Triple-P procedure depends on comorbidities and in particular, the placental position and the depth of villous invasion.[183] Small case series have also reported on the successful use of compression sutures and on using the cervix as a natural tamponade by inverting it into the uterine cavity, and suturing the anterior and/or the posterior cervical lips into the anterior and/or posterior walls of the lower uterine segment.[184–187]

Evidence level 3

A systematic review of peripartum surgical techniques used in placenta accreta spectrum has found that methotrexate (MTX) and uterus preserving surgical techniques are associated with a 16% unintentional urinary tract injury rate as opposed to 57% for standard hysterectomy and that use of ureteric stents reduces the risk of urologic injury.[188]

Evidence level 2++

There are no RCTs on the use of ureteric stents in placenta accreta spectrum. Ureteric stents or catheters are more commonly used preoperatively in the USA where around 26% of the members of both the SMFM[158] and ACOG fellows[160] are using them in the management of suspected abnormally invasive placenta.

Evidence level 4

### 8.4.2 What surgical approach should be used for women with placenta percreta?

**There is limited evidence to support uterus preserving surgery in placenta percreta and women should be informed of the high risk of peripartum and secondary complications, including the need for secondary hysterectomy. [*New 2018*]**

D

The following four approaches have been described.[136,158–160,164,166,189]

1. Primary hysterectomy following delivery of the fetus, without attempting placental separation.
2. Delivery of the fetus avoiding the placenta, with repair of the incision leaving the placenta in situ (see section 8.5).

 

3. Delivery of the fetus without disturbing the placenta, followed by partial excision of the uterine wall (placental implantation site) and repair of the uterus.
4. Delivery of the fetus without disturbing the placenta, and leaving it in situ, followed by elective secondary hysterectomy 3–7 days following the primary procedure.

There are no well-controlled observational studies, and therefore, no firm recommendations can be made.

Women with placenta percreta are more likely to require additional blood products and intensive care admission than women with placenta creta or increta.[189] The incidence of urological complications is also increased, including cystotomy and ureteric injury.[190]

When the urinary bladder is invaded by placental tissue, preoperative cystoscopy and the placement of ureteric stents have been recommended.[160,191] Planned cystotomy can prevent extensive muscularis damage and bleeding from attempts at dissection.[191]

Filling the bladder to identify the bladder separation site, opening the bladder to identify percreta villous tissue and removal of the involved bladder area have also been recommended by different authors.[160,164,192]

Evidence level 4

Uterus preserving surgery is possible in placenta percreta as demonstrated in a cohort study of 71 women. A multidisciplinary stepwise surgical approach, including bilateral ligations of the anterior division of the iliac arteries before removing the placenta, was shown to be successful in controlling the bleeding and preserving the woman's uterus in around 90% of the cases, with 14% of urinary tract complications, most of which can be identified and repaired during caesarean section.[193]

Evidence level 3

A review of 119 placenta percreta cases published in the international literature has shown that expectant management with the placenta left in situ is associated with severe long-term complications of haemorrhage and infections, including a 58% risk of secondary hysterectomy up to 9 months after the birth. Local resection appears to be associated with fewer complications within 24 hours postoperatively compared with hysterectomy or leaving the placenta in situ. However, a selection bias in the direction of less severe cases for the local resection technique may in part explain the lower complication rates with that approach.[194]

Evidence level 4

### *8.5 Expectant management (leaving the placenta in situ)*

**Elective peripartum hysterectomy may be unacceptable to women desiring uterine preservation or considered inappropriate by the surgical team. In such cases, leaving the placenta in situ should be considered. [*New 2018*]**

D

**When the placenta is left in situ, local arrangements need to be made to ensure regular review, ultrasound examination and access to emergency care should the woman experience complications, such as bleeding or infection. [*New 2018*]**

D

 

**MTX adjuvant therapy should not be used for expectant management as it is of unproven benefit and has significant adverse effects. [*New 2018*]** C

Conservative management in placenta accreta spectrum, including in cases of placenta increta and percreta, is an option for women who desire to preserve their fertility. However, it is not recommended in women presenting with major bleeding as it is unlikely to be successful and risks delaying definitive treatment and increasing morbidity.[5] Evidence level 4

A retrospective multicentre study examined 167 women treated conservatively for placenta accreta in tertiary university hospital centres in France between 1993 and 2007. Conservative expectant management with part of the placenta left in situ was successful in 131 out of 167 cases (78.4%; 95% CI 71.4–84.4).[195] One woman died of myelosuppression and nephrotoxicity related to MTX administration through the umbilical cord. Spontaneous placental resorption occurred in 87 out of 116 cases (75.0%; 95% CI 66.1–82.6), with a median delay from delivery of 13.5 weeks (range 4–60 weeks).[195] Evidence level 2+

Women should be warned of the risks of chronic bleeding, sepsis, septic shock, peritonitis, uterine necrosis, fistula, injury to adjacent organs, acute pulmonary oedema, acute renal failure, deep venous thrombosis or pulmonary embolism.[195] Prophylactic antibiotics may be helpful in the immediate postpartum period to reduce the risk of infective complications.[196] Evidence level 4

An observational case series, including 24 women with placenta accreta left in situ after delivery and treated with MTX, reported placental delivery in 33.3% of the cases (spontaneously in 55%, and in 45% following dilatation and surgical evacuation).[197] There was no control group of women who did not receive MTX and so it is unknown whether or not the MTX was clinically helpful. One woman did suffer liver damage and the risks of this therapy must be balanced against the unproven benefit.

The pattern of follow-up for the conservative management of placenta accreta spectrum is not supported by RCTs and is not stratified according to the depth and lateral extension of villous myometrial invasion. Some authors have reported cases where retained villous tissues have been removed after conservative management using hysteroscopic resection[198,199] or high-intensity focused ultrasound.[200] In rare cases, a disseminated intravascular coagulation may develop requiring a secondary hysterectomy.[201] Evidence level 3

### *8.6 When is interventional radiology indicated?*

**Larger studies are necessary to determine the safety and efficacy of interventional radiology before this technique can be advised in the routine management of placenta accreta spectrum. [*New 2018*]** D

**Women diagnosed with placenta accreta spectrum who decline donor blood transfusion should be cared for in a unit with an interventional radiology service.** D

 

Since the publication of the last version of this guideline there have been several cohort studies describing the use of interventional radiology in assisting surgical and conservative management of placenta accreta with variable success. The main aim of this procedure is to reduce the risks of intraoperative haemorrhage during the caesarean delivery of pregnancies diagnosed antenatally with placenta accreta spectrum. Various combinations have been proposed, including intraoperative internal iliac artery and/or postoperative uterine artery embolisation[202,203] and internal iliac artery[204–207] or abdominal balloon occlusion.[208–212] The latter technique has been increasingly used in China. However, the methodology of these studies is very heterogeneous with no data on the diagnosis of the different grades of villous invasion and variable confounding factors, such as placental position and number of previous caesarean deliveries. Small cohort studies have also been published on the use of a tourniquet[213,214] and of surgical artery ligation.[215]

Evidence level 3

A single institution observational cohort study of 45 cases of placenta accreta describes the use of prophylactic lower abdominal aorta balloon occlusion and found a reduced need for blood transfusion.[209] One of the cases was complicated by lower extremity arterial thrombosis and another by ischaemic injury to the femoral nerve. A comparative study of abdominal aortic occlusion versus internal iliac artery occlusion found that aortic balloon occlusion resulted in better clinical outcomes with less blood loss, blood transfusion, balloon insertion time, fluoroscopy time and fetal radiation dose.[212]

Evidence level 2–

A systematic review reported success rates of 159/177 (89.8%) for arterial embolisation, with secondary hysterectomy being necessary in 20/177 (11.3%) and subsequent menstruation occurring in 74/85 (87.1%). In 3/10 women (30%) a subsequent pregnancy occurred. Arterial balloon occlusion catheters have been associated with a success rate of 33/42 (78.6%) and the need for a secondary hysterectomy in 8/42 (19%).[181]

Evidence level 2++

The value of prophylactic placement of balloon catheters in the iliac arteries in cases of placenta accreta has been more controversial. This is mainly because of the higher risks of complications than embolisation, including iliac artery thrombus or rupture, and ischaemic nerve injury.[216–219]

Evidence level 3

A small RCT of women presenting with a prenatal diagnosis of placenta accreta was published in 2015.[220] The women were randomised to either preoperative prophylactic balloon catheters (n = 13) or to a control group (n = 14). No difference was observed for the number of women with blood loss greater than 2500 ml, number of plasma products transfused, duration of surgery, peripartum complications and hospitalisation length. Reversible adverse effects related to prophylactic balloon catheter insertion were noted in 2/13 (15.4%) cases.

Evidence level 1+

### 8.7 *How are women with undiagnosed or unsuspected placenta accreta spectrum best managed at delivery?*

**If at the time of an elective repeat caesarean section, where both mother and baby are stable, it is immediately apparent that placenta percreta is present on opening the abdomen, the caesarean section should be delayed until the appropriate staff and resources have been assembled and adequate blood products are available. This may involve closure of the maternal abdomen and urgent transfer to a specialist unit for delivery. [*New 2018*]**

✓

 