East Midlands Fetal Medicine Network Regional Guideline

Diagnosis and management of abnormally invasive placentae

Author: Dr Nia Wyn Jones, Consultant Obstetrician and sub-Specialist Feto-Maternal Medicine, Nottingham University Hospitals NHS Trust
Co-authors: Dr Farah Siddiqui, University Hospitals, Leicester; Dr Janet Ashworth, Royal Derby Hospital.

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Definitions

Abnormally invasive placentation (AIP) or placenta accreta spectrum, is a generalised term when a placenta implants with some degree of invasion into the uterine wall. It occurs as a consequence of deficiency in the decidua basalis layer of the uterus. It is graded by the depth of invasion and includes:

- placenta accreta, where the chorionic villi attach to the myometrium rather than being confined by the decidua basalis
- placenta increta, where the chorionic villi invade into the myometrium
- placenta percreta, where chorionic villi fully penetrate the myometrium and extend into the uterine serosa (parametrium). In some cases they can invade into surrounding structures.

Placenta praevia exists when the placenta is embedded wholly or partly into the lower segment of the uterus. It is classified as major if the placenta overlies the cervical os and minor or partial when the leading edge of the placenta is in the lower segment of the uterus but not covering the cervical os. It occurs in 0.3 – 0.5 % (up to 1 in 200) pregnancies.

Background

The incidence of placenta praevia and AIP along with its complications is increasing due to the increasing incidence of Caesarean section and increasing maternal age. Women are at increased risk of antepartum haemorrhage, preterm delivery, blood transfusion and hysterectomy. The commonest aetiological factor for AIP is previous endometrial injury particularly previous Caesarean section in combination with a placenta praevia. The risk of AIP in women with a placenta praevia and a history of one previous Caesarean section is approximately 10% in comparison to greater than 60% in women with three or more previous Caesarean sections.

The most important aspects of management of AIP are:

1. Early identification of pregnant women at risk of AIP
2. Multidisciplinary planning
3. Care and delivery in an appropriately experienced and equipped unit

Studies have shown that maternal morbidity and mortality are reduced (less bleeding and less likely to require further surgery)_when women with AIP deliver in a centre with a multidisciplinary care team who have experience in managing the risks and challenges in these cases and hence the reason for the development of a regional AIP service. There are three key areas that will be covered within the guideline: these include antenatal diagnosis; multi-disciplinary planning; and, management of delivery.

Antenatal diagnosis

Screening in local hospital

The anomaly scan (usually undertaken between 18 and 20+6 weeks) should include documentation of placental location. Any woman booking later than this gestation should additionally have the placental localisation documented at the time of their first scan.

The placenta should be reported as low lying if the leading edge is less than 20 mm from the internal cervical os or praevia if covering the os (RCOG). If the placenta is considered to be low lying or a praevia a transvaginal scan should be performed to confirm the diagnosis. This is safe to perform and more accurate than a transabdominal scan to confirm the diagnosis.

It is not recommended for local units to arrange an MRI without discussion with the AIP centre or to bypass the AIP service. Locally specialist USS is better for prediction of AIP than MRI due to operator experience- diagnosis with both modalities remains subjective and accuracy varies with experience of the operator. Systematic review confirms that for women with a previous Caesarean section and placenta praevia USS is highly predictive of AIP with a sensitivity of 97% (95% confidence interval 93-99%) and specificity of 97% (95% CI 97- 98%).

AIP should be suspected when there is a placenta praevia and particularly in women with additional risk factors. Risk factors are classified as major, intermediate or minor.

Women with a placenta praevia (covering os) and one major risk factor should be referred after their detailed scan.

Women should have a rescan at their local hospital between 26-28 weeks gestation if:
- placenta praevia (covering os) with 1 or more intermediate or 2 or more minor risk factors, or
- low lying placenta (<20mm at 20 weeks) with a 1 major/intermediate risk factor or 2 or more minor risk factors.
In these cases if the placenta is still covering or <20mm from os on TV scanning at 26-28 weeks referral to the AIP centre for further imaging is recommended.

90% of those with a low lying placenta at 20 weeks will migrate upwards with advancing gestation.

Major Risk Factors	History of: • Previous AIP • Caesarean section • Previous trachelectomy (removal of cervix) • Suspected scar ectopic in this pregnancy
Intermediate Risk Factors	History of: • ≥ 2 episodes of endometrial curettage (including ERPC and STOP) • Uterine surgery involving the endometrium (e.g. myomectomy which breached the cavity or resection of uterine septum) • Endometrial ablation • MROP with significant PPH requiring blood transfusion • Asherman's syndrome
Minor Risk Factors	History of: • 1 episode of endometrial curettage (including ERPC and STOP) • IVF • MROP not requiring blood transfusion • Previous postnatal endometritis or septic miscarriage

PLACENTA COVERING OS *PLUS* ONE MAJOR RISK FACTOR	PLACENTA COVERING OS *PLUS* ONE INTERMEDIATE OR TWO OR MORE MINOR RISK FACTORS PLACENTA < 20mm FROM OS WITH A RISK FACTOR
↓ **FOLLOWING COMPLETED DETAILED SCAN REFER TO REGIONAL AIP CENTRE FOR IMAGING**	↓ **RESCAN 26-28 WEEKS LOCALLY. IF PLACENTA <20MM FROM OS REFER TO REGIONAL AIP CENTRE**

A checklist is included to facilitate the screening (Appendix 1: page 14).

Referral protocol for women at increased risk of AIP

Referrals should be made on the Fetal Medicine referral form (Appendix 2: page 15) and the relevant unit telephoned for an appointment prior to faxing the referral over.

Women will be seen within 10 working days of referral, depending on gestation and urgency.

Referrals should be made to one of the following:

- Nottingham: Dr Nia Jones, Fetal Care Unit, City Hospital. Telephone number 01159249924, extension 56480
- Leicester: Dr Farah Siddiqui, Leicester Royal Infirmary. Telephone 01162587770
- Derby: Dr Janet Ashworth, Fetal Medicine, Royal Derby Hospital. Telephone: 01332785409.

Specialist AIP centre diagnostic service

Women attending for specialist scanning will have their scans performed by fetal medicine specialists who have experience in assessing for AIP.

At review the women will have an USS performed which will include greyscale and colour Doppler imaging.

A standardised reporting form will be used based on international consensus and necessitates confirming or refuting the ultrasound features for AIP (Appendix 3: page 16).

Women will be classified as having high, intermediate or low risk of AIP following the USS. Classification of each case will be reviewed by the fetal medicine AIP specialists. This will be facilitated by using WebEx.

Women with low risk of AIP will be referred back to their local hospital for standard care.

MRI may be requested on a subset of patients. This decision will be made by either the fetal medicine AIP specialist or following an MDT meeting. The MRI will aim to look at the extent of invasion of the placenta and involvement of surrounding, particularly lateral, structures.

Women with intermediate or high risk of AIP will have further discussions and planning of care by a MDT.

A Patient Information Leaflet will be given to women following the clinic review (Appendix 4: page 17).

Multidisciplinary planning for delivery

The multidisciplinary team will consist of:

- Fetal medicine specialists in AIP scanning
- Obstetrician
- Gynaecologists with experience in complex pelvic surgery
- Urologist
- Obstetric anaesthetist
- Interventional radiologist
- Vascular surgeon (Leicester)
- MRI radiologist

The team will meet (usually virtually by WebEx) to discuss the cases of intermediate and high risk of having AIP to plan delivery (both in elective and emergency scenarios).
We will endeavour to have one member of each specialty group will be in attendance. As a minimum a fetal medicine specialist, obstetrician and Gynaecologist should be in attendance.

There are four potential surgical approaches that have been described:

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

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.

Uterine preservation is appropriate in some women who wish to preserve fertility in the absence of excessive bleeding and when the extent of the AIP 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).

Elements of the planning will be discussed and documented (Appendix 5: page 21) and will include:

- Confirmation of diagnosis
- Assessment for evidence of extra-uterine invasion
- Timing of elective surgery including date and team
- Timing of admission

- Pre-operative investigations and management
    - FBC and ferritin
    - Blood group and presence of antibodies
    - Ensure patient would accept blood products if required
    - Further imaging- USS or MRI
- Surgical planning:
    - Planned anaesthesia
    - Cystoscopy and/or ureteric stenting
    - Interventional radiology
    - Patient positioning (supine or lithotomy)
    - Planned abdominal incision (Pfannenstiel or midline)

  - Operative plan- removal of placenta, surgical resection, hysterectomy, conservative (placenta left in situ)
  - Uterotonics to be given or avoided
  - Anticipated parametrial or paravesical dissection
  - Anticipated transfusion requirements
  - Team members to be present for delivery (elective and emergency)

- Review date to discuss plan with patient
  - Surgery
  - Anaesthesia
  - Interventional radiology

A formal written plan will then be formulated and discussed with the patient by either the lead obstetrician or fetal medicine specialist. Antenatal review with an anaesthetist will also be planned.

Pre-operative patient counselling

This will be carried out by the consultant obstetrician or fetal medicine specialist on the AIP team. Include partner/ family in meeting if possible to facilitate understanding.

Details of diagnosis and suspected extent of morbid adherence/abnormal invasion will be discussed.

Advise to avoid sexual intercourse, also advise to come to hospital if any vaginal bleeding.

Discuss planned antenatal admission.

Risks to be discussed include:

- Preterm delivery
- Antepartum haemorrhage
- Risk of severe haemorrhage
- Need for blood transfusion and cell salvage
- Potential for hysterectomy. May be the preferred option.
- Damage to surrounding structures, particularly bladder and ureters
- Potential risk of death (up to 7% for placenta percreta)

Discussion should also include a conversation around if family complete and option of sterilisation if uterus conserved and risk of AIP in subsequent pregnancy.

Elective delivery

Pre-operative management

Patients with suspected AIP should be delivered by Caesarean section. This should be done by an experienced multidisciplinary team as this is associated with improved outcomes.

All women with suspected AIP (intermediate or high risk on antenatal USS assessment) should be encouraged to remain close to the planned hospital for delivery in the third trimester and admission to hospital considered beyond 34 weeks in the absence of a history of ante-partum haemorrhage. Women

with a history of antepartum haemorrhage should be advised to stay in hospital after 32 weeks gestation as there is an increase in the risk of needing emergency delivery in the presence of previous APH.

In the presence of any APH the patient should be reviewed by a doctor at registrar level or above and the senior registrar on call and consultant on call should be informed of the event. Similarly the consultant on call should be informed if a patient with suspected AIP is admitted with tightenings or ruptured membranes.

Timing of delivery will depend upon the availability of an appropriate surgical team. At NUH in an elective case the operation will be performed at Nottingham City Hospital theatres. At Leicester the elective cases will be performed in the main theatres at LRI. At Derby the elective cases will be performed at Derby Royal hospital in Gynae theatres. Caesarean sections will usually be performed at 36 weeks gestation in women with AIP to reduce the risk of needing to perform an emergency delivery and earlier in women at high risk of early delivery. The timing of the delivery should be individualised and take into account the clinical history (e.g. bleeding) of the patient and availability of staff and resources and is a balance between the risk of emergency delivery and neonatal morbidity. Antenatal corticosteroids for fetal lung maturity should be administered prior to a planned Caesarean section and considered prior to an emergency delivery. A critical care bed should be booked at time of decision for elective surgery.

Haemoglobin should be optimised. Start iron if ferritin <30 µg/L or anaemic. Women should have a group and save sample sent on admission and in the presence of bleeding cross matching of blood 6 units). Routine cross matching during hospital admission is not necessary but those women who additionally have red cell antibodies should be discussed with Blood Bank and an individualised plan made. Six units of blood should be cross-matched on the day prior to the planned surgery.

A pre-operative checklist should be completed by 32 weeks gestation (Appendix 6: page 22). Consent for interventional radiology procedure will be completed by an interventional radiologist (independent of the consent for the Caesarean section. Ideally this will be done prior to the day of the surgery but this will be decided on a case by case basis.

Operative day

Pre-operative

There will be multiple teams and staff in theatre. Each team should nominate a team leader and the Consultant Obstetrician will take the overall lead for the case. Clear communication is essential and avoid overcrowding theatre- attendance more suitable for senior trainees compared to junior trainees and students.

Cases should ideally be planned for the morning and be the only planned case for this day.

All pre-operative preparation should be performed in accordance with the local elective Caesarean section pathway.

Ensure 6 units of blood is cross-matched and Blood Bank aware of case.

On the morning of the surgery the team should meet for a briefing and run through the plans for the day prior to commencing the operation. The briefing will be led by the obstetric lead surgeon.

The WHO and AIP pre-operative checklists will be completed. Appendix 7 (page 24) includes a list of equipment required for cases.

Team present will include:

- Obstetrician (team leader)
- Gynaecologist
- Anaesthetist (2 consultant anaesthetists at LRI)
- Interventional radiologist (+/- IR radiographer) (+ IR nurse)
- Theatre practitioner
- Midwife
- +/- Neonatal team

If an epidural is planned for anaesthesia this will be sited first followed by a urinary catheter (placement of iliac artery compliant balloons through a groin approach means that the patient cannot be positioned for these two procedure after interventional radiology).

Interventional radiology (if required): at NUH transfer patient to interventional radiology suite for insertion of iliac artery compliant balloons. In an emergency the interventional radiology team can perform the procedure in theatre. Please contact the interventional radiology consultant to discuss. Consultant anaesthetist, consultant obstetrician and midwife will accompany the patient to IR. At LRI and Derby interventional radiology is undertaken in theatre (C arm in theatre). Fetal monitoring should be considered during this procedure. Vasospasm (which should be evident to the interventional radiologists) can potentially be treated with Glyceryl Trinitrate (GTN).

Transfer back to theatres if applicable. Once intra-arterial compliant balloons are in place then care is required with patient transfer to minimise flexion of legs at the hips.

Top up epidural will commence and invasive monitoring lines may also be sited. Alternatively general anaesthesia will be commenced at this point.

Pre-operative cystoscopy and ureteric stent insertion (if required).

Ultrasound on table to confirm lie and position and plan abdominal and uterine incision site prior to Caesarean section (if required).

Intra-operative

Maintain normothermia during surgery.

Inspect uterine surface prior to incision for any evidence of AIP and for areas of abnormal vascularity.

Aim for a classical or high transverse incision to avoid the placenta. Incision through the placenta is associated with increased maternal and fetal bleeding.

Inflate intra-arterial compliant balloons (interventional radiologist) immediately after birth of baby. Embolisation may be required later if issues with haemostasis. Consider embolisation when total blood loss reaches 2.0 litres.

Allow time for the placenta to deliver spontaneously or, if retained and not bleeding, consider leaving placenta in situ.

Confirm operative plan i.e. hysterectomy, resection, attempted placental removal or leave placenta in situ based on pre-operative planning and operative findings.

If planning resection then there needs to be a 2cm area of normal uterine tissue between the area of AIP and the cervix to allow for reconstruction following resection. If this is not present a hysterectomy would be a more suitable procedure. Resection is also less likely to be successful in lateral AIP.

If planning hysterectomy, do not attempt to remove placenta. **Do not electively administer uterotonics** as can cause partial placental separation and increase risk of bleeding. Consider closure of uterine incision to reduce operative bleeding. Proceed with hysterectomy and set lowest landmark for total or subtotal hysterectomy.

Keep check on blood loss intra-operatively (the anaesthetist will take the lead on this) and ensure appropriate blood product transfusion (including cell salvaged blood). Activate major obstetric haemorrhage protocol if indicated and consider early use of tranexamic acid to attempt to reduce blood loss. Correct any clotting abnormalities. Uterotonics may be used to try and reduce blood loss from an atonic lower uterine segment.

Check the ureters: direct visualisation of the ureters during surgery may reduce the chance of injury.

Separate and mobilise bladder.

Once hysterectomy performed consider inflating bladder with normal saline +/- methylene blue to assess for any bladder injury.

Deflate intra-arterial compliant balloons and confirm haemostasis.

Insert drain intraperitoneally.

Removal of intra-arterial balloon +/- sheath will be completed by the interventional radiologists and the end of the operation. Leaving the sheaths in post-operatively is associated with risk of thrombosis and limb ischaemia and is not recommended.

Complete WHO checklist (sign out).

Post-operative

The majority of women will be managed on the Delivery Suite. Surgical HDU or critical care may be required depending upon blood loss, haemodynamic stability, acidosis, temperature etc. For the majority the stay in critical care is likely to be around 24 hours. Anaesthetist to inform critical care once clear that patient does not require a critical care bed.

Follow post Caesarean section protocol for observations unless an amended plan requested by anaesthetic and surgical team.

Avoid excessive patient movement post-operatively as the risk of significant haemorrhage from the groin sites is high if this does occur.

Leave invasive monitoring in situ until haemodynamic stability is confirmed and discuss with duty anaesthetist prior to removal.

Correct any acidosis, hypothermia, hypocalcaemia or coagulopathy. Check FBC, coagulation fibrinogen, U&E, Calcium post-operatively and the following day as a minimum.

Rhesus negative women who have received cell salvaged blood transfusion need a maternal Kleihauer and cord blood for fetal blood group. It should be clearly documented on the request form that cell salvage blood has been transfused. Repeat Kleihauer 30-45 minutes after the cell salvaged blood transfusion in case more anti-D will be required. If the baby is Rhesus positive (or blood group unknown) the minimum dose of Anti-D given should be 1500 IU.

Women are at increased risk of PN thromboembolism in view of prolonged operative time, heavy blood loss, extensive pelvic dissection, reduced mobility and possible blood product use. Postnatal thromboprophylaxis with low molecular weight heparin (e.g. clexane) is therefore recommended for a minimum of 10 days, longer if the patient remains in hospital or has further complications. The surgical and anaesthetic team should confirm with the midwife the timing of the first dose.
Senior registrar or consultant should review the patient prior to transfer to the ward.
Offer PN follow up for debrief.

Emergency delivery

Some cases may require emergency delivery or may not be diagnosed prior to commencing surgery.

In women with suspected AIP surgical preparation may be in place- **FOLLOW PATIENTS' PRE-OPERATIVE PLAN/ CHECKLIST**.

At the AIP centre inform the appropriate personnel:

1. On call consultant Obstetrician
2. On call consultant Anaesthetist responsible for Obstetrics
3. On call consultant Gynaecologist
4. On call consultant Vascular Interventional Radiologist
5. On call vascular team (LRI)
6. Theatre co-ordinator
7. Blood Bank
8. Neonatal Unit
9. Alert on call urology consultant
10. Alert critical care

For women with suspected AIP emergency Caesarean section is mostly performed in the presence of vaginal bleeding, PROM and/or uterine contractions.

In Nottingham in emergency situations the team will attend to the appropriate hospital where the patient is admitted rather than attempting to transfer the patient between hospitals at this point. The operative care pathway as described above will be followed.

For outlying hospitals in order to reduce the chances of women presenting as an emergency recommendations are for women to be admitted at Nottingham/ Leicester/ Derby prior to the delivery.

However if there are cases that attend at a local hospital, the team at this Unit should contact the appropriate team at either Nottingham, Leicester or Derby. The point of contact will be:

1. Nottingham: Dr Nia Jones via switchboard 09:00- 17:00 weekdays or on call obstetric consultant at City Hospital outside these hours or if Dr Jones unavailable.
2. Leicester: Dr Farah Siddiqui or Fetal medicine consultant via switchboard 0900-1700 weekdays or the consultant obstetrician on call for LRI outside these hours or if Dr Siddiqui unavailable.
3. Derby: Dr Janet Ashworth, via switchboard 09:00- 17:00 weekdays or on call obstetric consultant at Derby Royal Hospital outside these hours or if Dr Ashworth unavailable.

The aim should be transfer of these women to the AIP centre prior to surgery if at all possible.

Some cases of AIP will not be diagnosed antenatally and it is important to recognise signs of AIP at the time of surgery.

Clinical operative features of AIP:

There may be features to suggest AIP at the time of Caesarean section. These include:

- Abnormal vascularity on the serosal surface of the uterus overlying the placenta
- Bluish tinge to the uterine wall
- Bulging of the uterine wall

If these features are recognised then it is important to ensure that the right team are involved with the delivery from here. Consideration should be given to delaying the surgery and transfer the patient to the AIP centre. If a trainee has commenced the operation they should not continue until there is a consultant present. Decision by the consultant should be whether to transfer the patient to the AIP centre or continue with the surgery locally. To assist with the latter decision-making the consultant should contact the AIP team at one of the three regional sites (Nottingham, Leicester or Derby) to decide the appropriate course of action. Delivery at the AIP centre is likely to lead to reduced blood loss and morbidity but may increase the risk of fetal compromise. Out of hours the consultant on call can be contacted through switchboard. Consideration is needed on whether the patient is stable for transfer. If the surgery is to be completed locally consider if a second consultant is needed for the surgery and ensure senior anaesthetist and adequate anaesthetic support is in theatre.

If the baby is to be delivered locally then the uterine incision should be done distal to the placental site (often either classical or high transverse incision). Once the baby is delivered then a decision needs to be made as to whether to close the uterus and transfer the patient to the AIP centre or whether to continue with surgery locally. The decision should be made in conjunction with a discussion with the AIP centre and will depend on the stability of the patient and extent of bleeding. If the incision has been made through the placenta then it is unlikely that bleeding will be controlled to allow for transfer. If the decision is to complete the surgery locally the placenta should be left in situ and an emergency hysterectomy performed as attempting to separate the placenta is likely to increase blood loss.

Do not transfer the patient without contacting the AIP centre first.

Aortic compression can be performed in desperate cases to try and control the bleeding (to achieve this extend vertical incision above the umbilicus) this can be maintained for several hours if necessary (up to 4 hours) whilst further assistance is sought.

Care pathway for patients with placenta left in situ

For a proportion of patients the decision will be made to leave the placenta in situ at the time of the Caesarean section. The patient can then either be managed conservatively or further interval surgical intervention planned when there is potentially less morbidity from placental invasion of surrounding structures e.g. bladder.

In this group of women the risk of subsequent hysterectomy is high (28- 30%) - half occurring within the first 24 hours after the primary surgery and half delayed (Mei 2015; Sentilhes 2010).

There is a significant risk of AIP in subsequent pregnancies (10-30%) (Timmermans 2007, Ramoni 2013).

It may take many months (6-12 months) for the placenta to be entirely reabsorbed with conservative management. Patient selection is therefore important and only suitable for those willing to attend for regular review.

In these cases it is important to counsel the patient about the risk of bleeding, which can be severe, and infection. The complications can occur immediately or be delayed for a significant length of time (months). A patient information leaflet can be given to the patient (Appendix 8: page 26).

Other recognised complications include:

- Infectious morbidity (sepsis, septic shock, peritonitis, renal impairment, pulmonary oedema)
- Fever secondary to tissue necrosis
- Prolonged retention of products of conception
- Prolonged bleeding
- Placental polyps
- Expulsion of placental tissue vaginally
- Vesicouterine fistula in cases of placenta percreta (rare)
- Venous thromboembolism

Symptoms and signs of infection should be discussed with the patient and inflammatory markers should be checked if there is clinical suspicion of infection.

Administer antibiotics (oral cephalexin or alternative if penicillin allergy) for 7 days post-delivery in all cases.

Uterine artery embolization and methotrexate have not been proven to reduce the risk of infection and bleeding and therefore should not be routinely recommended.

Monitor for resorption with serum human chorionic gonadotrophin (β-HCG) and ultrasound. HCG should be performed weekly and USS monthly until the placenta is completely reabsorbed (β-HCG <5, normal USS).

If a patient presents with continued or heavy bleeding options for further management include:

- Radiological embolization
- Surgery: selective arterial ligation, uterine balloon tamponade, uterine compression sutures and hysterectomy.

Audit

Data on outcomes of cases reviewed by the service will be continually and prospectively collected. This will include information on:

- Accuracy of antenatal diagnosis
- Gestation at delivery
- Blood loss
- Blood product administration
- ICU stay and duration
- Operative details including incision, surgical procedure undertaken
- Maternal complications
- Fetal complications
- Balloon inflation duration
- Embolisation undertaken and details

Appendices

Appendix 1: Checklist for risk factors for abnormally invasive placentation

Appendix 2: Fetal Medicine referral form

Appendix 3: AIP service ultrasound reporting form

Appendix 4: Patient information leaflet for placenta praevia and abnormally invasive placentation (RCOG)

Appendix 5: AIP service MDT proforma

Appendix 6: AIP service pre-operative checklist

Appendix 7: AIP service list of possible equipment

Appendix 8: Patient information leaflet for placenta left in situ

CHECKLIST: Risk factors for abnormally invasive placenta (AIP)

To be completed on all women with low lying placenta at 20 weeks

		Risk factor present	
		YES	NO
Major Risk Factors	**Previous Abnormal Invasive Placentation**		
	Previous Caesarean section		
	Previous trachelectomy (removal of cervix)		
	Suspected scar ectopic in this pregnancy		
Intermediate Risk Factors	Two or more episodes of endometrial curettage -including Evacuation of retained products of conception (ERPC) and Surgical termination of pregnancy (STOP)		
	Uterine surgery involving the endometrium (e.g. myomectomy which breached the cavity or resection of uterine septum)		
	Endometrial ablation		
	Manual removal of placenta with significant postpartum haemorrhage requiring blood transfusion		
	Asherman's syndrome		
Minor Risk Factors	One episode of endometrial curettage (including ERPC / STOP)		
	IVF		
	MROP not requiring blood transfusion		
	Previous postnatal endometritis or septic miscarriage		

- **Women with a placenta praevia (covering os) and one major risk factor (previous AIP, Caesarean section or trachelectomy, suspected scar ectopic) should be referred after their detailed scan.**
- **Women should have a rescan at their local hospital between 26-28 weeks gestation if:**
  - placenta praevia (covering os) with 1 or more intermediate or 2 or more minor risk factors, or
  - low lying placenta (<20mm at 20 weeks) with a 1 major/intermediate risk factor or 2 or more minor risk factors
- **If the placenta is still covering or <20mm from os on TV scanning at 26-28 weeks referral to the AIP centre for further imaging is recommended.**
- **For referrals use fetal medicine referral form (available online or Appendix 2) FAO Dr Jones (Nottingham), Dr Siddiqui (Leicester), Dr Ashworth (Derby). Fax referral form and copy of this checklist. See AIP pathway for further information.**
- **90% of those with a low lying placenta at 20 weeks will migrate upwards with advancing gestation.**

Signature: _____

NAME: _____ Date: _ _ / _ _ / _ _

FETAL MEDICINE CLINIC REFERRAL FORM	Date of referral:

Fix addressograph sticker here	Name of person completing referral form: Name of Base Hospital and Responsible Consultant: Liaison Neonatologist:

Parity:	Date of detailed scan:	EDD:	Weight: (Kg)	BMI:

In order to provide appropriate information for the fetal scan please tick the box identifying the indication for the scan below and then add appropriate detail in the space at the bottom of the page**. This information is critical to the planning and performance of the scan.**

	Request for ultrasound assessment and ongoing management plan:
	1. Fetal malformation or anomaly identified or suspected: state:
	2. Known increased risk of genetic or chromosomal anomaly: state
	3. Previous fetal anomaly with increased recurrence risk:
	4. History of periconceptual exposure to teratogenic drugs (e.g. Lithium/mycophenolate):
	5. Request for invasive testing: Carrier of gene or chromosomal disorder: state: Increased Nuchal Translucency in the first trimester (>3.5mm) High risk on screening High risk on NIPT Increased Nuchal Fold measurement in the second trimester (>6mm) Rhesus D group
	6. Placenta praevia plus one major or two or more minor risk factors for abnormally invasive placentation (please also include copy of checklist with referral)::
	7. Other indication. **Use box below to specify reason for referral:**
Further Information: **Allergies:**	

Appt date/time:	Parents Informed: Yes / No	Fax sent date/time:
Interpreter required: Yes / No	Patient contact number:	GP name & address:

AIP service ultrasound reporting form

SUSPECTED ABNORMALLY INVASIVE PLACENTA (AIP)

Ultrasound report

Demographics and Risk Factors

Name:
DOB:
Hospital or NHS number:

Date: _ _/_ _/_ _ _ _ EDD: _ _/_ _/_ _ _ _ Gestational age: _ _ weeks _ days

Parity ☐ BMI: _ _._ _ Mode of conception: Spontaneous ☐ IVF ☐

Number of previous CS ☐ Number of classical CS ☐ Allergies: _____

Number of previous surgical evacuations (including TOP) ☐

Was Cesarean scar pregnancy suspected/diagnosed in first trimester? Yes ☐ No ☐ Not known ☐

Previous uterine surgery (e.g. myomectomy, endometrial ablation) Yes ☐ No ☐ Not known ☐

History of AIP Yes ☐ No ☐ Not known ☐

Placenta previa on ultrasound Yes ☐ No ☐ Not known ☐

If yes: Anterior placenta previa < 2 cm from internal os ☐ Covering internal os ☐

Posterior placenta previa < 2 cm from internal os ☐ Covering internal os ☐

Desire for future fertility: _____ Episode of APH Yes ☐ No ☐ Gestation: _ _ + _ weeks

Ultrasound Signs

Cervical length (without funnel or placental tissue)			**mm**
Grayscale ultrasound parameters and definition	**Yes**	**No**	**Unsure**
Loss of 'clear zone' *- Loss, or irregularity, of hypoechoic plane in myometrium underneath placental bed ('clear zone')*			
Myometrial thinning *- Thinning of myometrium overlying placenta to <1mm or undetectable*			
Abnormal placental lacunae *- Presence of numerous lacunae including some that are large and irregular, often containing turbulent flow visible on grayscale imaging*			
Bladder wall interruption *- Loss or interruption of bright bladder wall (hyperechoic band or 'line' between uterine serosa and bladder lumen)*			
Placental bulge *- Deviation of uterine serosa away from expected plane, caused by abnormal bulge of placental tissue into neighboring organ, typically bladder; uterine serosa appears intact but outline shape is distorted*			
Focal exophytic mass *- Placental tissue seen breaking through uterine serosa and extending beyond it; most often seen inside filled urinary bladder*			
Color Doppler ultrasound parameters and definition	**Yes**	**No**	**Unsure**
Uterovesical hypervascularity *- Striking amount of color Doppler signal seen between myometrium and posterior wall of bladder; this sign probably indicates numerous, closely packed, tortuous vessels in that region (demonstrating multidirectional flow and aliasing artifact)*			
Subplacental hypervascularity *- Striking amount of color Doppler signal seen in placental bed; this sign probably indicates numerous, closely packed, tortuous vessels in that region (demonstrating multidirectional flow and aliasing artifact)*			
Bridging vessels *- Vessels appearing to extend from placenta, across myometrium and beyond serosa into bladder or other organs; often running perpendicular to myometrium*			
Placental lacunae feeder vessels *- Vessels with high-velocity blood flow leading from myometrium into placental lacunae, causing turbulence upon entry*			
Parametrial involvement	**Yes**	**No**	**Unsure**
- Suspicion of invasion into parametrium			

Clinical Significance of Ultrasound Findings

Probability of clinically significant AIP High ☐ Intermediate ☐ Low ☐

Extent of AIP Focal ☐ Diffuse ☐

Signature: _____ **PRINT:** _____ **POSITION:** _____

NHS East Midlands Clinical Networks

Health & care information you can trust

Royal College of Obstetricians & Gynaecologists

Information for you

Published in September 2018

Placenta praevia, placenta accreta and vasa praevia

About this information

This information is for you if you have placenta praevia (a low-lying placenta after 20 weeks of pregnancy) and/or placenta accreta (when the placenta is stuck to the muscle of your womb). It also includes information on vasa praevia. It may also be helpful if you are a partner, relative or friend of someone in this situation.

A glossary of all medical terms used is available on the RCOG website at: www.rcog.org.uk/en/patients/medical-terms.

Key points

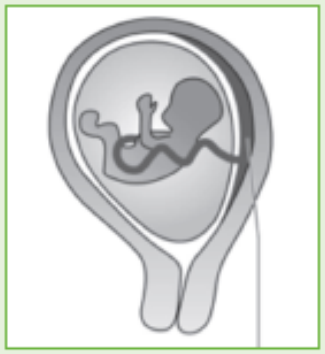
- Placenta praevia happens when your placenta (afterbirth) attaches in the lower part of your uterus (womb), sometimes completely covering the cervix (neck of the womb).
- This can cause heavy bleeding during pregnancy or at the time of birth.
- If you have placenta praevia, your baby will probably need to be born by caesarean.
- Placenta accreta is a rare but serious condition when the placenta is stuck to the muscle of your womb and/or to nearby structures such as your bladder. This is more common if you have previously had a caesarean. It may cause heavy bleeding at the time of birth.
- Vasa praevia is a very rare condition where blood vessels travelling from your baby to your placenta, unprotected by placental tissue or the umbilical cord, pass near to the cervix. If these blood vessels tear, this can be very dangerous for your baby.

What is placenta praevia?

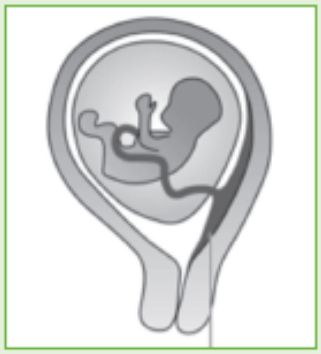
The placenta develops together with the baby in your uterus during pregnancy. It attaches to the wall of your uterus and provides a connection between you and your baby. Oxygen and nutrients pass from your blood through the placenta into your baby's blood. The placenta is delivered shortly after the baby is born and it is sometimes called the afterbirth.

In some women, the placenta attaches low down in the uterus and may cover part of or all of the cervix (the neck of the womb). In most cases, the placenta moves upwards and out of the way as the uterus grows during pregnancy. For some women, however, the placenta continues to lie in the lower part of the uterus as the pregnancy continues. This condition is known as low-lying placenta if the placenta is less than 20mm from the cervix or as placenta praevia if the placenta completely covers the cervix.

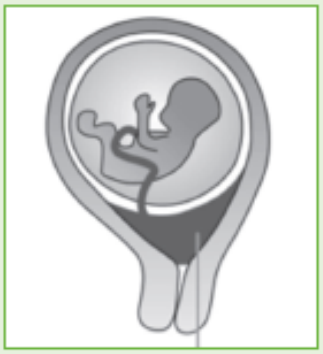
Placenta praevia is more common if you have had one or more previous caesarean births, if you had had fertility treatment in order to fall pregnant, or if you smoke.



Normal placenta



Low-lying placenta (less than 20mm from the cervix)



Placenta praevia (completely covering the cervix)

What are the risks to me and my baby?

There is a risk that you may have vaginal bleeding, particularly towards the end of the pregnancy, because the placenta is low down in your uterus. Bleeding from placenta praevia can be very heavy, sometimes putting both your and your baby's life at risk.

Your baby may need to be born by caesarean because the placenta may block the birth canal, preventing a vaginal birth.

How is placenta praevia diagnosed?

A low-lying placenta is checked for during your routine 20-week ultrasound scan. Most women who have a low-lying placenta at 20 weeks will not go on to have a low-lying placenta later in the pregnancy: 9 out of 10 women with a low-lying placenta at their 20-week scan will no longer have a low-lying placenta when they have their follow-up scan, and only 1 in 200 women overall will have placenta praevia at the end of their pregnancy. If you have previously had a baby by caesarean, the placenta is less likely to move upwards.

Placenta praevia is confirmed by having a transvaginal ultrasound scan (where the probe is gently placed inside the vagina). This is safe for both you and your baby and it may be used towards the end of your pregnancy to check exactly where your placenta is lying.

Placenta praevia may be suspected if you have bleeding in the second half of pregnancy. Bleeding from placenta praevia is usually painless and may occur after having sex.

Placenta praevia may also be suspected later in pregnancy if the baby is found to be lying in an unusual position, for example bottom first (breech) or lying across the womb (transverse).

What extra antenatal care can I expect if I have a low-lying placenta?

If your placenta is low lying at your 20-week scan, you will be offered a follow-up scan at 32 weeks of pregnancy to see whether it is still low lying. This may include a transvaginal scan. You should be offered a further ultrasound scan at 36 weeks if your placenta is still low lying.

The length of your cervix may be measured at your 32-week scan to predict whether you may go into labour early and whether you are at increased risk of bleeding.

If you have placenta praevia, you are at higher risk of having your baby early (less than 37 weeks) and you may be offered a course of steroid injections between 34 and 36 weeks of pregnancy to help your baby to become more mature. See the RCOG patient information *Corticosteroids in pregnancy to reduce complications from being born prematurely* (www.rcog.org.uk/en/patients/patient-leaflets/corticosteroids-in-pregnancy-to-reduce-complications-from-being-born-prematurely/).

If you go into labour early, you may be offered a type of medication (known as tocolysis) that is given to try to stop your contractions and to allow you to receive a course of steroids.

Additional care, including whether or not you need to be admitted to hospital, will be based on your individual circumstances. Even if you have had no symptoms before, there is a small risk that you could bleed suddenly and heavily, which may mean that you need an emergency caesarean.

If you know you have a low-lying placenta, you should contact the hospital straight away if you have any vaginal bleeding, contractions or pain. If you have bleeding, your doctor may need to do a speculum examination to check how much blood loss there is and where it is coming from. This is a safe examination and you will be asked for your consent beforehand.

You should try to avoid becoming anaemic during pregnancy by having a healthy diet and by taking iron supplements if recommended by your healthcare team. Your blood haemoglobin levels (a measure of whether you are anaemic) will be checked at regular intervals during your pregnancy.

How will my baby be born?

Towards the end of your pregnancy, once placenta praevia is confirmed, you will have the opportunity to discuss your birthing options with your healthcare professional.

Your healthcare team will discuss with you the safest way for you to give birth based on your own individual circumstances.

If the edge of your placenta is less than 20 mm from the entrance to the cervix on your scan at 36 weeks, a caesarean will be the safest way for you to give birth. If the placenta is further than 20 mm from your cervix you can choose to have a vaginal birth.

Unless you have heavy or recurrent bleeding, your caesarean will usually take place between 36 and 37 weeks. If you have had vaginal bleeding during your pregnancy, your caesarean may need to take place earlier than this.

If you are having a caesarean, a senior obstetrician and anaesthetist should be present at the time of birth and you should give birth in a hospital with facilities available to care for you if you experience heavy bleeding. This is particularly important if you have had one or more caesareans before.

Your anaesthetist will discuss the options for anaesthesia if you are having a caesarean birth.

During your caesarean, you may have heavier than average bleeding. There are many different things that your doctors can do to stop the bleeding, but if it continues and cannot be controlled in other ways, a hysterectomy (removal of your uterus) may be needed.

If you have heavy bleeding before your planned date of delivery, you may be advised to have your baby earlier than expected.

If you have placenta praevia, you are more likely to need a blood transfusion, particularly if you have very heavy bleeding. During a planned caesarean, blood should be available for you if needed. If you feel that you could never accept a blood transfusion, you should explain this to your healthcare team as early in your pregnancy as possible. This will give you the opportunity to ask questions and to discuss alternative plans as necessary. For more information, see the RCOG patient information *Blood transfusion, pregnancy and birth* (www.rcog.org.uk/en/patients/patient-leaflets/blood-transfusion-pregnancy-and-birth/).

What is placenta accreta?

Placenta accreta is a rare (between 1 in 300 and 1 in 2000) complication of pregnancy. This is when the placenta grows into the muscle of the uterus, making delivery of the placenta at the time of birth very difficult.

Placenta accreta is more common in women with placenta praevia who have previously had one or more caesarean births, but it can also occur if you have had other surgery to your uterus, or if you have a uterine abnormality such as fibroids or a bicornuate uterus. It is more common if you are older (over 35 years old) or if you have had fertility treatment, especially in vitro fertilisation (IVF).

Placenta accreta may be suspected during the ultrasound scans that you will have in your pregnancy. Additional tests such as magnetic resonance imaging (MRI) scans may help with the diagnosis, but your doctor will only be able to confirm that you have this condition at the time of your caesarean.

If you have placenta accreta, there may be bleeding when an attempt is made to deliver your placenta after your baby has been born. The bleeding can be heavy and you may require a hysterectomy to stop the bleeding. There is a risk of injury to your bladder during the delivery of your placenta, which depends on your individual circumstances.

If placenta accreta is suspected before your baby is born, your doctor will discuss your options and the extra care that you will need at the time of birth. It may be planned for you to have your baby early, between 35 and 37 weeks of pregnancy, depending on your individual circumstances. You will need to have your baby in a hospital with specialist facilities available and a team with experience of caring for women with this condition. Your team may discuss with you the option of a planned caesarean hysterectomy (removal of your uterus with the placenta still in place, straight after your baby is born) if placenta accreta is confirmed at delivery.

It may be possible to leave the placenta in place after birth, to allow it to absorb over several weeks or months. Unfortunately, this type of treatment is often not successful and can be associated with very serious complications such as bleeding and infection. Some women will still go on to need a hysterectomy.

Your healthcare team will discuss a specific plan of care with you depending on your individual situation.

What is vasa praevia?

Vasa praevia is a very rare condition affecting between 1 in 1200 and 1 in 5000 pregnancies. It is where blood vessels travelling from your baby to your placenta, unprotected by placental tissue or the umbilical cord, pass near to the cervix. These blood vessels are very delicate and can tear when you are in labour or when your waters break. This is very dangerous as the blood that is lost comes from your baby. Babies only have a small amount of blood in their bodies so they don't need to lose much to become very unwell or even die. Up to 6 in 10 affected babies can die if this happens.

If your healthcare professional suspects that you may have vasa praevia when you go into labour or when your waters break, your baby needs to be born urgently. Usually an emergency caesarean would be recommended.

If your placenta is low, if you are carrying more than one baby or if your placenta or umbilical cord develops in an unusual manner, you are at higher risk of having vasa praevia. You may be offered an extra scan during your pregnancy to check whether you have this condition.

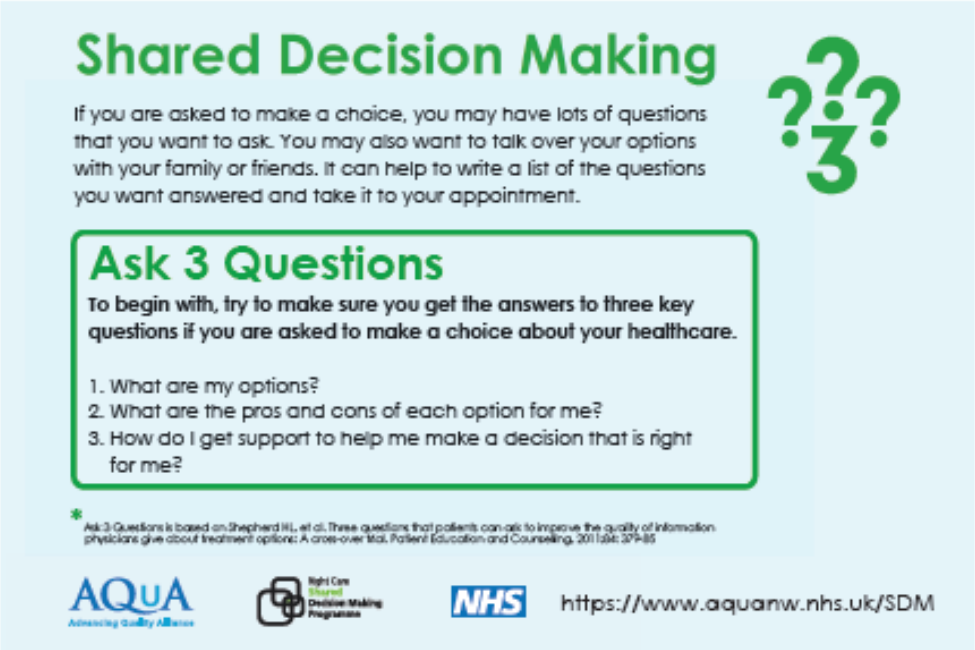
If you are found to have vasa praevia before you go into labour, you should be offered a planned caesarean at around 34–36 weeks of pregnancy. As this would mean that your baby is being born preterm, you would be offered a course of steroids (two injections, 12–24 hours apart) to help mature your baby's lungs and other organs. See the RCOG patient information *Corticosteroids in pregnancy to reduce complications from being born prematurely* (www.rcog.org.uk/en/patients/patient-leaflets/corticosteroids-in-pregnancy-to-reduce-complications-from-being-born-prematurely/).

Further information

National Childbirth Trust (NCT): www.nct.org.uk/pregnancy/low-lying-placenta

Tommy's: www.tommys.org/pregnancy-information/pregnancy-complications/low-lying-placenta-placenta-praevia

Making a choice



Sources and acknowledgements

This information has been developed by the RCOG Patient Information Committee. It is based on the RCOG Green-top Guidelines No.27(a), *Placenta Praevia and Placenta Accreta: Diagnosis and Management*, and 27(b), *Vasa Praevia: Diagnosis and Management*. The guidelines contain a full list of the sources of evidence we have used. You can find them online at: www.rcog.org.uk/en/guidelines-research-services/guidelines/gtg27a and www.rcog.org.uk/en/guidelines-research-services/guidelines/gtg27b.

This information has been reviewed before publication by women attending clinics in Liverpool and Wrexham and by the RCOG Women's Network and Women's Voices Involvement Panel.

NHS East Midlands Clinical Networks

AIP service multidisciplinary meeting proforma

Date of meeting: __ / __ / __ Completed by: _____

Team members present and specialty: Planned site: Derby ☐ Nott. ☐ Leic. ☐

_____

_____

_____

Local/base hospital: _____

Allergies: _____

BMI: _____

Patient information

Confirmation of diagnosis

USS diagnosis: _____

Images reviewed by fetal medicine consultant with interest in AIP YES ☐ NO ☐

Index of suspicion: High ☐ Intermediate ☐ Low ☐

Extra-uterine involvement suspected YES ☐ NO ☐

Surgical planning recommendations

Comorbidities (e.g. blood borne infection, major cardiac disease): _____

Obstetric complications (e.g. APH, pre-eclampsia): _____

Recommendation for timing: Elective surgery: _____ weeks Admission: _____ weeks

Anaesthesia: _____

Pre-Caesarean Cystoscopy: YES ☐ NO ☐

Ureteric stenting YES ☐ NO ☐

Interventional radiology involvement planned YES ☐ NO ☐

Cell salvage YES ☐ NO ☐

Patient positioning for Caesarean section: Supine ☐ Lithotomy (transient) ☐

Elective use of uterotonics YES ☐ NO ☐

Abdominal incision: Vertical ☐ Pfannenstiel ☐

Surgical plan for placenta: removal of placenta, surgical resection, hysterectomy, conservative (placenta in situ)

_____

Anticipated parametrial or paravesical dissection: _____

Anticipated transfusion requirements:

Team members to be present for delivery (elective and emergency):

_____

_____

_____

Comments:

_____

AIP: The pre-operative checklist

Part 1 (completed ideally by 32 weeks)

Patient information:

Date of elective procedure: ___ / ___ / ____ Co-ordinating obstetric consultant: _____

Theatre booked: ☐

Planned consultants:

- Obstetrician: _____
- Gynaecologist: _____
- Urologist: _____
- Anaesthetist: _____
- Interventional radiologist: _____
- Other: _____

Consent form completed

- Surgery ☐
- Interventional radiology ☐

Delivery Suite manager informed: ☐

Obstetric theatre manager informed: ☐

Haematologist informed of case: ☐

Critical care bed booked: ☐

NNU informed: ☐

Interventional radiology procedure booked ☐

C arm booked ☐

Accepts blood transfusion: YES/ NO (if no refer to unit guideline on women who decline blood products)

Blood results: Hb ☐ WCC ☐ Plt ☐ Coagulation result: _____

Iron supplementation (if applicable): ☐

Antenatal corticosteroids- date planned: ____ / ____ / ____
Antenatal planned admission date: ____ / ____ / ____

Completed by:
Signature: _____ Print name: _____

The pre-operative checklist: Part 2 (completed day of surgery)

Blood results: Hb ☐ WCC ☐ Plt ☐ Coag ☐

Na ☐ K ☐ Urea ☐ Creatinine ☐

Blood crossmatched: 6 units: ☐

Blood Bank informed of case: ☐

Antenatal corticosteroids ☐

Patient fasting ☐

Ranitidine ☐

TED stockings ☐

Cell salvage: equipment ☐ team ☐

WHO checklist

Complete part 1 in theatre when patient arrives ☐

Separate WHO checklist will be completed in interventional radiology

WHO checklist will be reconfirmed on arrival back in theatres

Planned anaesthesia: GA ☐ Epidural ☐ Spinal ☐

Anaesthetic machine checked ☐

Routine uterotonics planned YES ☐ NO ☐

Completed by:

Signature: _____ Print name: _____

AIP: Equipment list

Arterial line pack

CVC pack (don't open)

Swan introducer (don't open)

Ultrasound machine for siting CVC

Double transducer

Patient forced air warmer (Bair hugger)

Rapid infusion device (if available)

Urinary catheter (with integrated temperature probe if available)

Patient wedge for interventional radiology suite (table does not tilt)

Pneumatic compression stockings (Flowtron)

Cell salvage

Epidural pack

Appropriate airway and intubation equipment for GA

Infusion pumps

Portable monitor for observations

CTG

Ultrasound machine

Resuscitaire

Caesarean prep pack

Image intensifier (C-arm) and lead aprons

Uterotonic drugs: Syntocinon, ergometrine, carboprost, misoprostol, plus tranexamic acid

Floseal

Brace suture

Bakri balloon

Negative pressure wound dressing if BMI greater than 35.

Blood in theatre for commencement of Caesarean section

(TEG if available)

Urology cases:

Image stack

25ch cystoscope sheath set

30’ 4mm telescope

Saline irrigation (compatible with irrigation set)

Irrigation set (Fresenius of Baxter)

Cystoscopy procedure pack (alternative D&C pack plus irrigation set)

Guidewire (Boston Scientific – sensor) x 2

4.8fr x 24cm stent x 2 (Boston Scientific percuflex)

4.8fr x 26cm stent x 2 (Boston Scientific percuflex)

Ureteric access catheter (prn)

Omnipaque just in case of difficulty and contrast is required to visualise the urinary system

Patient information leaflet for women with a placenta accreta treated by leaving the placenta in the womb

Who is this information for?

This information is intended for women where there is either a plan to leave the placenta in the womb after the delivery of the baby or women where this management has occurred. It may also give helpful information for a partner or relative or for those considering their options to deal with a problem known as placenta accreta or an abnormally invasive placenta.

What is a placenta accreta (or an abnormally invasive placenta)?

This is a rare condition when the placenta grows into the muscle of the womb, making separation at the time of birth difficult. Placenta accreta is more commonly found in women with placenta praevia who have previously had a Caesarean section.

Placenta accreta may be suspected in the antenatal period when a woman undergoes an ultrasound scan, but while additional tests such as magnetic resonance imaging (MRI) scans may help with the diagnosis your doctor will only be able to tell for sure if you have this condition at the time of your Caesarean section.

Placenta accreta causes bleeding when an attempt is made to remove your placenta. The bleeding may be severe and you may require a hysterectomy (removal of the womb) to stop the bleeding. It may be possible to leave the placenta in place after birth, to allow it to absorb over a few weeks and months. This information leaflet gives more information on this strategy to deal with the issue of the placental problem and discusses the benefits, complications and alternatives to this strategy. This type of care is not an option for all women with this condition and the doctor will discuss its suitability in your case.

Why might my placenta be left in the womb?

If the placenta is growing into the muscle of the womb it may be an option to leave it in the womb to reduce the risk of complications such as bleeding or damaging other structures around the womb. Overall this type of treatment is recommended for women where the risks of trying to remove the placenta mean that it is thought to be safer for you to have the placenta left in the womb. However, only women who are stable and without excessive bleeding at the point of delivery of the baby are able to be considered for this type of care. The placenta will then be reabsorbed by the body over the course of a few months or further surgery may be planned at a later date.

What extra care will I need?

Women who have had the placenta left in the womb will need additional care after the birth. This will involve having a course of antibiotics for a week to reduce the chance of infection and follow up in the hospital with regular blood tests and scans to see if the placenta is shrinking. It may take months for the placenta to completely disappear. If you wish to have this type of treatment you will need to be able to attend the hospital regularly after the birth to see the doctor and have these tests.

What are the possible complications?

The two main complications are bleeding, which can be very heavy in some cases, and infection. Overall 2-3 out of 10 women with this condition will end up needing a hysterectomy later but the risks may not be as high as at the time of the delivery of the baby. The complications can occur soon after the baby is born or after many weeks or months. Symptoms suggestive of infection include a high temperature, shaking (rigors), pain in the lower abdomen, vaginal discharge that is offensive smelling, feeling unwell and inability to control you temperature. In the case of infection you will likely need admission into hospital for antibiotics. Rarely infection may make you feel very unwell with signs and symptoms of sepsis when your blood pressure falls and affects the blood flow and function of other organs in the body. If your mobility is affected then there is additionally an increased risk of blood clot in the legs or lung.

If there is heavy bleeding then the doctor may recommend further treatment that is either undertaken in X-ray or further surgery.

A placenta accreta can happen in a further pregnancy in between 1 and 3 out of 10 women, depending on where the placenta develops in the womb next time. It is not possible to predict or influence where the placenta develops in the womb in any pregnancy.

Are there any alternative options for dealing with the placenta?

The doctor will discuss with you the alternative options to deal with a placenta accreta. Generally the options are to try and remove the placenta in its entirety, to cut away any area that the placenta is growing into the womb together with that area of the womb, to remove the womb (hysterectomy) or to try and leave the placenta in the womb. There are different reasons why one form of treatment may be better for each individual patient and the doctor will discuss these with you.

Contact details:

The contact details for the team are:

Nottingham: Dr Nia Jones via Fetal Medicine department (01159249924 extension 61924/56480) or nia.jones@nottingham.ac.uk

Leicester: Dr Farah Siddiqui at Leicester Royal Infirmary (01162587770) or farah.siddiqui@uhl-tr.nhs.uk

Derby: Dr Janet Ashworth at Royal Derby Hospital (01332785409) or janet.ashworth1@nhs.net