GUIDANCE DOCUMENT

Morbidly Adherent Placenta

PATIENT IDENTIFICATION

1) Targeted placental imaging in the early 3rd trimester (no later than 28-32 weeks) for MAP:

**HISTORICAL RISK FACTORS**
- Prior cesarean delivery
- Placenta previa or low lying placenta
- History of endometrial ablation
- Prior uterine surgery, including multiple dilation & curettage
- Multiple episodes of vaginal bleeding

**SONOGRAPHIC RISK FACTORS**
- Abnormal placental appearance, uterine shape, and/or vascularity of the myometrial wall
- Current/previous cesarean scar

2) Ultrasound imaging should be the primary diagnostic modality.

3) MRI may be useful for:
   - Suspected placenta percreta (extent of invasion)
   - Posterior placenta
   - Unclear or non-diagnostic ultrasound imaging

4) Advise consultation or multidisciplinary team management at a center with resources:

<table>
<thead>
<tr>
<th>Suspected placenta accreta/increta/percreta</th>
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</thead>
<tbody>
<tr>
<td>Placenta previa with abnormal sonographic appearance</td>
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<tr>
<td>Placenta previa with &gt;2 prior cesarean deliveries</td>
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<tr>
<td>History of classical cesarean delivery and anterior placentation</td>
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<tr>
<td>History of endometrial ablation or pelvic irradiation</td>
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<tr>
<td>Inability to adequately evaluate or exclude suspicious findings for placenta accreta in patients with risk factors</td>
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(continued)


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### Key Elements

The following key elements must be addressed with the patient in the outpatient setting at the time of suspected diagnosis:

- Severity of diagnosis
- Warning signs for immediate hospital evaluation prior to scheduled delivery
- Delivery facility
  - (Is the patient aware of your referral plans? Have you discussed these plans with her?)
- Desire for future fertility*
- Health care proxy
- Indicated preterm birth
- Potential maternal & neonatal ICU admissions
- Acceptance of blood transfusion
- Baseline labs
  - (CBC, basic metabolic panel, Liver function panel, PT/INR, PTT, fibrinogen)
- Screen for anemia & identify etiology
- Optimize hematocrit
  - (see additional recommendations on the management of anemia)

*Desire for Future Fertility Considerations*

<table>
<thead>
<tr>
<th></th>
<th>Benefits</th>
<th>Risks</th>
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<tbody>
<tr>
<td><strong>Hysterectomy</strong></td>
<td>• Definitive therapy</td>
<td>• Hemorrhage</td>
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<td></td>
<td>• Rare readmission for complications</td>
<td>• Bladder injury</td>
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<tr>
<td><strong>Conservative Approach</strong></td>
<td>• Possible uterine preservation</td>
<td>• Delayed PPH</td>
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<td></td>
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<td>• Sepsis</td>
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<td>• Coagulopathy requiring delayed reoperation with hysterectomy</td>
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(continued)
Unsuspected placenta percreta discovered at LAPAROTOMY BEFORE DELIVERY

**Intraoperative findings suggestive for percreta:**
- Distorted or distended lower uterine segment
- Blood vessels visible on uterine serosa
- Placental invasion into bladder or surrounding tissues

**No bleeding, stable maternal/fetal status and facility is not prepared**
- Cover uterus with warm laparotomy packs and await assistance and supplies before proceeding with hysterotomy and operative intervention
- Close fascial incision, place staples in skin, and consider transfer to tertiary facility with experience in management of percreta

**Active bleeding, patient unstable**
- Apply local pressure to bleeding areas (other than areas where placental tissue is at risk)
- Prepare for hysterotomy and delivery followed by definitive management of placenta percreta

**Example**

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**Unexpected Intraoperative Findings**

Previously unsuspected placenta accreta discovered after delivery

If this circumstance is encountered after a vaginal delivery, patient should expeditiously moved to OR and algorithm followed.

### Evaluate available resources
- Blood/blood products
- Surgical assistance (gynecologic oncologists, vascular surgeons)
- Critical care specialists
- Interventional radiologists
- Additional equipment (cystoscope, blood salvage device, equipment for massive transfusion)

### Call for Help

Gynecologic oncologists
Blood bank specialists (to activate massive transfusion protocol)
Surgeons with experience in accreta
Critical care specialists
Interventional radiologists (should be considered)
Vascular surgeons (should be considered)
Anesthesiologists

### Consider extending incision to Maylard or Cherney incision, if needed

### Keep patient warm

### Consider conversion to general anesthesia

### Expeditiously close hysterotomy & proceed with hysterectomy

### Assess location & extent of placental invasion visually & with ultrasound

### Evaluate for presence of active bleeding intra-abdominally & vaginally

### Monitor pH & lactate

### Monitor & treat coagulopathy

### Consider alternatives only in select situations:
- A blood salvage device (as an alternative in smaller institutions)
- Tamponade devices (as needed)
- Hypogastric artery ligation
- Leave placenta in situ, close hysterotomy, and perform a delayed hysterectomy (only if not bleeding)

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**Revised July 2016**


2 Silver & Barbour, 2015
## Suggested Criteria for Accreta Center of Excellence*

<table>
<thead>
<tr>
<th>Multidisciplinary Team</th>
<th>ICU &amp; Facilities</th>
<th>Blood Services</th>
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<tbody>
<tr>
<td>MFM or OB</td>
<td>Interventional radiology</td>
<td>Massive transfusion capabilities</td>
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<tr>
<td>Imaging experts (ultrasound)</td>
<td>Surgical or medical ICU (24-hour availability of intensive care specialists)</td>
<td>Cell saver and perfusionists</td>
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<tr>
<td>Pelvic surgeon (gynecologic oncology or urogynecology)</td>
<td>NICU (gestational age appropriate for neonate)</td>
<td>Experience and access to alternative blood products</td>
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<tr>
<td>OB or cardiac anesthesiologist</td>
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<td>Guidance from transfusion medicine specialists or blood bank pathologists</td>
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<tr>
<td>Trauma/general surgeon</td>
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<tr>
<td>Interventional radiologist</td>
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<td>Neonatologist</td>
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### Multidisciplinary Team Tasks

<table>
<thead>
<tr>
<th>Organize</th>
<th>Review</th>
<th>Determine</th>
<th>Establish</th>
<th>Obtain</th>
<th>Consider</th>
<th>Discuss</th>
<th>Delinate</th>
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</thead>
<tbody>
<tr>
<td>Team meeting for delivery planning</td>
<td>Case &amp; imaging</td>
<td>• Timing (34%-35% weeks)</td>
<td>Blood bank massive transfusion capability</td>
<td>Pre-operative labs (T&amp;C, CBC, basic metabolic panel, liver function panel, PT, PTT, INR and fibrinogen)</td>
<td>• Administration/timing of ACTs</td>
<td>Anesthetic and surgical approach</td>
<td>Emergency plan</td>
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<tr>
<td>Confirm with blood bank of time/ location of surgery/immediate availability of blood products</td>
<td>Confirm equipment needs</td>
<td>• Location (L&amp;D vs. main operating room)</td>
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<td>• Admission day prior to planned surgery</td>
<td>• Regional vs. general anesthesia</td>
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<td></td>
<td>Alert critical care team</td>
<td>• Team (as noted above)</td>
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<td>• Vascular access and timing of placement</td>
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<td></td>
<td>Establish adequate IV access for massive hemorrhage</td>
<td>• Need for IR and/or ureteral stents</td>
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<td>• Patient positioning (dorsal lithotomy vs. supine)</td>
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<td>If regional anesthesia and IR planned, place epidural catheter first &amp; minimize hip flexion</td>
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<td>• Vertical skin incision</td>
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<td></td>
<td>Early, aggressive intraoperative transfusion</td>
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<td>• +/- intra-operative sonographic confirmation of anterior placental edge for mapping uterine incision</td>
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<td></td>
<td>Re-dose antibiotics for EBL&gt;1500mL or prolonged OR time</td>
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<td>• Fundal or classical uterine incision</td>
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<td>Intraoperative SCDs and aggressive post-operative VTE chemoprophylaxis</td>
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<td></td>
<td>• No manipulation of placenta during delivery of fetus</td>
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<td></td>
<td>• Tie umbilical cord and place required sutures for hemostasis on hysterotomy</td>
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<td>• Immediate hysterectomy vs. waiting for placental separation in lower risk cases</td>
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</table>

### Important Considerations for Procedure Day

- Confirm with blood bank of time/ location of surgery/immediate availability of blood products
- Confirm equipment needs
- Alert critical care team
- Establish adequate IV access for massive hemorrhage
- If regional anesthesia and IR planned, place epidural catheter first & minimize hip flexion
- Early, aggressive intraoperative transfusion
- Re-dose antibiotics for EBL > 1500mL or prolonged OR time
- Intraoperative SCDs and aggressive post-operative VTE chemoprophylaxis

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**Revised July 2016**