Highly specialized, highly experienced care for the treatment of placenta accreta, increta and percreta

**Morbidly Adherent Placenta Program**

**Appointments**
For more information or to schedule an appointment, call 832-826-7500 (select Option 2, then 2).

Baylor College of Medicine
Department of Obstetrics and Gynecology
Division of Maternal-Fetal Medicine
Morbidly adherent placenta (MAP) is a rare but serious pregnancy complication in which the placenta grows deeply into the wall of the uterus and is unable to detach after childbirth. Known as placenta “accreta”, “increta” or “percreta” depending on the depth of invasion, these conditions lead to complex pregnancies and deliveries with the potential for life-threatening hemorrhage.

Baylor College of Medicine Department of Obstetrics and Gynecology leads one of the busiest programs in the world for the treatment of morbidly adherent placenta. We care for these patients every day, offering the multidisciplinary approach required to achieve the best possible maternal and neonatal outcomes, in a compassionate environment.

The number of women with MAP that we care for is rapidly escalating as our outcomes continue to attract a growing number of referrals.

We will take care of you, providing the specialized care you and your baby need, in a family-centered environment.

About Morbidly Adherent Placenta (MAP)

When a woman becomes pregnant, the placenta develops in the uterus, attaches itself to the uterine wall and begins providing nutrients and oxygen to the growing fetus through the umbilical cord. Known as the “afterbirth”, normally immediately after childbirth the placenta afterbirth detaches from the uterine wall and is pushed out through the birth canal in vaginal deliveries or through the cesarean incision.

In cases of morbidly adherent placenta, the blood vessels and other parts of the placenta grow too deeply into the uterine wall and become inseparable. Known as morbidly adherent placenta, the condition can be life-threatening, causing vaginal bleeding during the third trimester of pregnancy and severe hemorrhage after delivery.

There are several types of morbidly adherent placenta, depending on the severity:
- Placenta accreta – the placenta grows into the uterine lining
- Placenta increta – the placenta grows into the muscular wall of the uterus
- Placenta percreta – the placenta grows through the wall of the uterus and in some cases into adjacent organs, such as the bladder, colon, or nearby vessels

Rising Incidence Rates

According to the American College of Obstetricians and Gynecologists (ACOG), the incidence of morbidly adherent placentation was 1 in 4,027 pregnancies in the 1970s, compared to 1 in 533 pregnancies by the year 2002, the most recent estimate as published by ACOG. An estimated 4 to 8% of patients with MAP die from the condition. With early diagnosis and specialized treatment, many of these deaths may be preventable.
Diagnosis Saves Lives
Morbidly adherent placenta typically causes no symptoms, although bleeding may occur during the third trimester. With early diagnosis, plans can be put in place to minimize the risk of uncontrolled bleeding at delivery, and improve outcomes for mothers and babies.

If you have risk factors during pregnancy, such as placenta previa and/or previous cesarean deliveries, diagnosis can be made using imaging tests to evaluate the location of the placenta and look for abnormal growth into the uterine wall. Diagnostic imaging tests include:
- **Ultrasound** – most often used to diagnose MAP conditions
- **Magnetic Resonance Imaging (MRI)** – MRI is typically reserved for pregnancies in which ultrasound findings suggest complications that will likely require advanced multispecialty care (e.g. extension of the placenta into the broad ligament, maternal bladder, or involving other areas of the maternal abdomen), the placenta is posterior and more difficult to evaluate with ultrasound, or ultrasound results remain unclear.

At Baylor College of Medicine we are identifying at-risk patients through the latest advancements in maternal and fetal imaging, including state-of-the-art 2D and 3D ultrasound. The leading-edge technology we use and our imaging team’s experience in evaluating and treating morbidly adherent placenta continue to improve outcomes and set our program apart.

Our Approach to Treatment
Delivery is carefully timed to minimize the risk of bleeding for you and to minimize the impact of prematurity for your baby. Our patients are typically delivered 4 to 5 weeks ahead of their due date through a planned cesarean delivery, followed immediately by a hysterectomy.

In general the safest way to manage morbidly adherent placitation is to deliver the baby by a cesarean delivery that leaves the placenta untouched, and then to remove the uterus and cervix (total abdominal hysterectomy). The patient’s ovaries are both left in place unless one or both need to be removed for safety (which only occurs about 10% of the time). The surgery that we usually perform is called a modified radical hysterectomy because we remove the uterus and cervix along with a small amount of the tissue that attaches the uterus to the pelvis. This is to ensure that placental tissue is not disturbed. This method reduces the potential for blood loss and has been shown to be very effective with our patients (Shamshirsaz et al 2014).

Patients often ask whether there is a more conservative approach that allows them to avoid hysterectomy. In select cases where the placenta is not low-lying (previa), and when a patient would prefer to retain her uterus, it may be possible to remove the part of the uterus where the placenta is attached and repair the remaining uterus. However, this option is rare and must be determined on a case-by-case basis. We would only offer this option to a patient who understands the risks, and consents to a hysterectomy if at the time of surgery that is the safest approach.

One other management alternative that has been offered is that of performing a cesarean section, leaving the placenta inside and waiting for the placental tissue to become reabsorbed. Unless this is the only safe option available to us, we usually do not do this because of the risks associated with this approach which include:
- Delayed life-threatening hemorrhage
- Prolonged treatment that may involve multiple procedures to drain purulent material
- High risk of a delayed emergency hysterectomy
- High risk of infection and need for ICU care due to sepsis (severe infection)
- Recurrent morbidly adherent placenta and other complications in subsequent pregnancies

Are You at Risk?
While the exact cause of morbidly adherent placenta is unknown, factors that can increase the risk of developing these conditions include:
- **Placenta previa** – a condition in which the placenta covers part or all of the cervix, or sits in the lower portion of the uterus; a reported 75% of women with morbidly adherent placental conditions have placenta previa
- **Prior cesarean delivery** – studies show an estimated 66% of women with morbidly adherent placenta have had prior cesarean deliveries; the risk increases with increasing numbers of cesareans
- **Prior uterine surgery** – including myomectomy (removal of uterine fibroids) or D&C (dilation and curettage)
- **In vitro fertilization (IVF)** – many women requiring IVF have had other intrauterine procedures
- **Advanced maternal age** – defined as 35 years or older
- **Smoking**
- **Uterine conditions** that cause abnormalities in the lining of the uterus, such as fibroids

Women at greatest risk are those who have placenta previa in combination with a history of prior cesarean delivery.
In one observational study, almost 30% of patients who did not undergo hysterectomy developed another morbidly adherent placental condition in a subsequent pregnancy. Most babies delivered at 34-35 weeks will require at least a short stay in a neonatal intensive care unit (NICU) to be sure that the baby is safe.

**Surgery for Morbidly Adherent Placentation (MAP) Versus Normal Cesarean Delivery**

<table>
<thead>
<tr>
<th>Type of Procedure</th>
<th>Modified radical cesarean hysterectomy</th>
<th>Routine C-section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morbidity/Mortality</td>
<td>MAP occurs in 1 in 533 pregnancies, 4.8% mortality</td>
<td>32.9% of all pregnancies (1 in 3) are delivered by C-section, extremely low mortality risk</td>
</tr>
<tr>
<td>Timing of Admission/Delivery</td>
<td>Admission at 33 weeks</td>
<td>Delivered at term (39 weeks or more) 2-4 day hospital stay</td>
</tr>
<tr>
<td>Length of Hospital Stay</td>
<td>Delivery by 34-35 weeks, 4-5 day hospital stay</td>
<td>May require hysterectomy to control bleeding</td>
</tr>
<tr>
<td>Impact of placenta previa</td>
<td>Cesarean delivery recommended by 34-35 weeks</td>
<td>May require mechanical ventilation</td>
</tr>
<tr>
<td>ICU</td>
<td>Overnight stay in ICU following surgery</td>
<td>Not required; patient sent to regular room</td>
</tr>
<tr>
<td>Fetal Considerations</td>
<td>Preterm delivery, Steroids to help protect lungs, brain and intestinal tract, Most require NICU stay</td>
<td>Delivery at term, NICU admission rare</td>
</tr>
<tr>
<td>Blood Loss</td>
<td>Heavy blood loss, Transfusions often required (as many as 90% of placenta accreta patients require transfusions)</td>
<td>Minimal blood loss</td>
</tr>
<tr>
<td>Possible Complications</td>
<td>Excessive bleeding, Hemorrhagic shock, Death</td>
<td>Low rate of serious complications</td>
</tr>
<tr>
<td>Type of Surgical Incision</td>
<td>Long vertical skin incision, which may be visible above underwear or bikini</td>
<td>“Bikini cut,” sometimes can be hidden by underwear</td>
</tr>
<tr>
<td>Length of Surgery</td>
<td>Typically several hours (on average 4 to 5 hours), Highly complex cases may last up to 12 hours or more</td>
<td>Often 10-15 minutes from incision to delivery (within 5 minutes for emergency C-sections), Additional 45 minutes for delivery of the placenta and suturing, May require more time if a repeat cesarean delivery</td>
</tr>
<tr>
<td>Anesthesia</td>
<td>General anesthesia during hysterectomy, An arterial line in the wrist and central IV line in the neck required, May be eligible for epidural for delivery, if considered safe in consultation with anesthesiologist</td>
<td>Epidural or combined spinal epidural common, General anesthesia occasionally required</td>
</tr>
</tbody>
</table>

**An Experienced Team Partnering with You**

Our experience and success in treating even the most severe cases of morbidly adherent placenta is attracting a growing number of patients from across the country seeking the best available maternal, fetal and neonatal care. It is crucial that any specialized program caring for women with MAP provides comprehensive care with a standardized approach that is available 24/7. MAP is a complex issue that demands the highest attention to much more than the surgery itself. Two immensely important services that must be available 24/7 are Anesthesiology and Blood Banking. All facilities where we provide this service have their own Blood Bank and 24/7 staffing capable of delivering the necessary blood products for even the most serious bleeding problems. The Anesthesiology team is one of the most experienced in the world in the management of MAP cases. We are also privileged to have a team of Psychiatrists and social workers who provide support to women coping with a complex surgery, loss of future fertility, and a preterm birth.

We are prepared and equipped to address the needs of you and your family throughout every step of these complex pregnancies and deliveries, coordinating and mobilizing the resources required should emergencies arise along the way.

Delivery is performed at one of our partner hospitals, depending on the needs of the patient. All patients are cared for by the same multidisciplinary team of specialists, regardless of where they are delivered.

Despite optimal planning, transfusion management and surgical care, there remains a risk that maternal death may occur due to the severity of hemorrhage caused by morbidly adherent placenta conditions.

**Your Specialized Healthcare Team**

Here, you’ll be cared for by a highly skilled, highly experienced team of specialists, including:

- Maternal-Fetal Medicine
- Gynecologic Oncology
- Anesthesiology
- Blood Bank/Transfusion Medicine
- Urology
- Pulmonary & Critical Care
- Neonatology
- Psychiatry/Support Groups
- Interventional Radiology/Radiology
- Pathology
- Respiratory Therapy
- Specialized nurses and support staff
What to Tell Your Family and Friends

Family and friends need to be informed about the seriousness of your condition – including the risks of premature delivery, life-threatening hemorrhage, and the need for a hysterectomy – so they can be prepared to support you and your partner throughout the pregnancy, at delivery and postpartum.

Prenatal Care – What to Expect During Your Pregnancy

Throughout your pregnancy you will be cared for by Baylor College of Medicine Maternal-Fetal Medicine specialists – physicians specially trained in the treatment of high-risk pregnant women and their unborn babies. Your prenatal visits will take place at one of our clinic locations in the Texas Medical Center.

While your care will be individualized based on your unique needs and pregnancy, prenatal care for morbidly adherent placenta patients typically includes:

- Basic recommended prenatal care
- Oral and/or IV iron supplements, for treatment of anemia prior to any expected blood loss
- Steroids to promote lung function in preterm babies
- Frequent prenatal visits compared to routine pregnancy
- Regular ultrasounds, every 3-4 weeks
- Consultations with your care team, most of which take place after admission
- The need to be in close proximity to the hospital as your planned delivery date approaches
- Admission at 33 weeks and delivery by 34-35 weeks, earlier if bleeding or contractions occur during pregnancy
- Treatment of coexisting maternal or neonatal conditions by the multidisciplinary team of specialists, to reduce the risk to both mother and baby
For Referring Physicians

We are here to care for your high-risk patients and welcome all referrals, regardless of gestational age. We encourage you to refer your patients as soon as possible for a diagnostic ultrasound if you suspect your patient is at risk for MAP. Early referral after a diagnosis enables proper planning for a safe delivery. Whenever possible, we recommend transfer of care be requested by 24 to 28 weeks, to allow adequate time for consultation and evaluation. If you have a case diagnosed late, please call us directly so we may coordinate your patient’s care.

Baylor College of Medicine is committed to preserving the relationship between women and their primary physicians. We will return your patients to you immediately following negative test results or delivery. You will receive a detailed plan of care including separate ultrasound and/or MRI reports.

To make a referral, please see the contact information on the insert included with this brochure.

About Baylor College of Medicine

As Baylor College of Medicine faculty members, our physicians not only provide expert clinical and surgical care, they are in the classroom educating the next generation of MAP specialists and in the lab conducting innovative research to improve our understanding and treatment of these devastating conditions. As a result, we are uniquely positioned to bring you the latest advancements in the diagnosis and treatment of morbidity adherent placenta.

My Percreta Story – A Patient Letter

“Being a mother is learning about strengths you didn’t know you had, and dealing with fears you didn’t know existed.” – Linda Wooten

The first thing I would tell a patient with accreta/percreta is to acknowledge the situation. It won't benefit you in any way if you deny what is happening. Realize that it is okay to be scared about your situation. You may need to hear the information once, then go home and have a good cry, and then hear the information again at your next appointment.

One thing that was really hard for me was accepting the fact that I had to have a hysterectomy. I already had three kids and we were done at four regardless, but it was the fact that it was not my choice. The decision was made for me and that was hard for me to accept.

Once you have all of the information and a plan is laid out, take a deep breath. You are in the best place possible to take care of you and your baby. The doctors and staff are amazing! Dr. Fox and Dr. Belfort are extensively trained in this condition. I went to or called every high risk OB in DFW. All of them said accreta/percreta is extremely rare. The majority of them stated that it was out of their scope of practice. The others said they would try to take care of me, but that they hadn’t seen a case since their residency, or for 15 years, or they would have to refer it. None of that was comforting. So I went to work trying to find the best place for me. I knew that I valued my life and my son’s life more than to be somebody’s case study. I wanted to go to a place that had seen accreta/percreta before, had protocols already in place, and had an amazing success rate. Then I found Dr. Belfort’s research and knew this is where I needed to be. He states he works with the best in the country. I couldn’t agree more! They have protocols in place that ensure the best possible outcome for you and your baby. I was scared about the whole situation, but especially about having a baby born early. I can handle going through this, but I wasn’t sure what implications my baby would have as a result of the surgery. What gave me a huge peace of mind was that I was at a children’s hospital. Nowhere else can you be guaranteed that you have the best people for you and should your child need any interventions, Texas Children’s Hospital has the best neonatologists in the country.

Finally, a little advice that helped me through my journey:

- It’s okay to get emotional. It is a huge undertaking and can be scary. It is okay to be upset about the hysterectomy, the disappointment of not having the ideal birth, and the unknown of the upcoming delivery.
- Do not get down on yourself; this is not your fault nor anyone else’s.
- Try to keep calm about the situation. Stress will not help you or the baby. Talk to a professional if you need it.
- Use your resources. If you have questions ask your doctor or NP. This group deals with this all the time, pick their brains.
- Be open and honest with your friends and family. It is so important to have their support. Once you are in the hospital it can be an isolating experience. Having a solid support group can make all the difference.
- Go on a family vacation (doctor permitted). Take time to remove yourself from work and the stress of everything. Taking a weekend trip with my husband and kids absolutely renewed my spirit and gave me the strength to prepare myself for the birth/procedure.
- Don’t forget to enjoy your pregnancy. That little person you are growing inside of you will one day want to hear about your journey. Revel in those kicks and hiccups, feeling them move is sometimes all the reassurance you need. “No one else will ever know the strength of my love for you. After all, you are the only one who knows what my heart sounds like from the inside.” – Kristen Proby, Fight With Me
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About Ben Taub Hospital

Ben Taub Hospital, long revered for its outstanding quality of acute care services, is home to one of Houston’s premiere obstetrics and gynecology centers, providing highly acclaimed care for even the most complex, high-risk pregnancies. Part of the Harris Health System, this state-of-the-art facility includes an elite Level I trauma center and a Level III Neonatal Intensive Care Unit (NICU). Ben Taub’s OB/GYN center is staffed entirely by Baylor College of Medicine faculty and residents, known for their expertise in managing high-risk pregnancies, deliveries and infant care, and ranked among the best-trained in the nation.

Make an Appointment

For more information or to schedule an appointment, call the Department of Obstetrics and Gynecology at Ben Taub Hospital at 713-873-3352.

For Referring Physicians

To make a referral, please call 713-873-3352 or send a fax to 713-873-3156.

Ben Taub Hospital
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Houston, TX 77030