

PLACENTA ACCRETA AND PERCRETA: INCIDENCE, RISKS, DIAGNOSIS, COUNSELING AND PREPARATION FOR DELIVERY

Richard Lee, MD, Los Angeles County and University of Southern California Medical Center

BACKGROUND AND LITERATURE REVIEW

The rising incidence of placenta accreta is due to the rapidly rising numbers of primary and repeat cesarean births. The most recent data in California shows that 31% of all births are by cesarean section. One study at The University of Chicago showed that between 1982 and 2002 (before the greatest rise in cesarean births) the overall incidence of placenta accreta was 1 in every 533 deliveries. (1)

There are four types of placenta previa: 1) a complete previa occurs when the placenta completely covers the internal os; 2) a partial previa occurs when the placenta partially covers the internal os; 3) a marginal previa occurs when the placenta is located next to the internal os; 4) a low lying placenta occurs when the placental margin is within two centimeters of the internal os, but not next to the internal os.

A placenta accreta occurs when there is abnormally firm attachment of placental villi to the uterine wall with the absence of the normal intervening deciduas basalis and Nitabuch's layer. There are three variants of this condition: 1) *accreta*: the placenta is attached to the myometrium; 2) *incretta*: the placenta extends into the myometrium; and 3) *percreta*: the placenta extends through the entire myometrial layer and uterine serosa.

Risk

The risk of placenta accreta is highest in patients with both prior cesarean birth and placenta previa (placenta previa also increases with prior cesarean births). Silver, et al. reported proportionally increasing risk of placenta accreta with increasing numbers of prior cesareans in women with or without placenta previa (See Table). (2)

Cesarean Delivery	Previa	Previa*: Accreta† N (%)	No Previa‡: Accreta† N (%)
First§	398	13 (3.3%)	2 (0.03%)
Second	211	23 (11%)	26 (0.2%)
Third	72	29 (40%)	7 (0.1%)
Fourth	33	20 (61%)	11 (0.8%)
Fifth	6	4 (67%)	2 (0.8%)
≥6	3	2 (67%)	4 (4.7%)

*Percentage of accreta in women with placenta previa.

†Increased risk with increasing number of cesarean deliveries; P < .001.

‡Percentage of accreta in women without placenta previa.

§Primary cesarean.

Diagnosis: A diagnosis of accreta can be confirmed with tissue histology; however, medical imaging can be an effective diagnostic tool. Ultrasound can detect the presence of accreta (80% sensitivity) and absence of accreta (95% specificity). (3-6) Warshak et al. reported that in cases with suspicious or inconclusive ultrasonography results, MRI accurately predicted placenta accreta with 88% sensitivity and 100% specificity. (5) While MRI's specificity is enhanced when gadolinium is used, its effects on the fetus remain uncertain; many researchers believe benefits of its use outweigh risks associated with mis- or undiagnosed placenta accreta. (5) A recent Stanford study suggests that high-resolution sonography and MRI give similar results but are complimentary when one modality is inconclusive. (6)

Second trimester Maternal Serum Alpha-Fetoprotein (MSAFP) may also be helpful. In two recent studies of patients with placenta previa, MSAFP was elevated in 45% of those with accreta, and not in those without accreta. (7)

Counseling: Providers caring for patients with prenatally suspected placenta accreta should counsel patients extensively about potential risks and complications well in advance of their estimated due date. Patients with accreta are at increased risk for hemorrhage, blood transfusion, bladder/ureteral damage, infection, need for intubation, prolonged hospitalization, ICU admission, need for reoperation, thromboembolic events and death. (2, 6-8) Discussions should involve relative likelihood for hysterectomy and subsequent infertility.

Delivery Timing: In patients with strong suspicion for placenta accreta, it is strongly advised to perform the delivery before labor begins or hemorrhaging occurs. (7) Therefore, consideration should be given to performing the cesarean birth electively and prematurely, either after corticosteroids for fetal lung maturation or after documentation of fetal lung maturity. The committee could not reach consensus on the recommended gestational age for elective delivery; some tertiary referral centers recommended 32-34 weeks and others 35-36 weeks. All agreed that patients with repeated bleeding episodes or deeper invasion (e.g. placenta percreta) should be delivered early.

Delivery Preparations: Advance planning with anesthesia, blood bank, nursing (OB and OR) and advanced surgeons is an essential first step. Advanced surgeons are gynecology oncologists or experienced pelvic surgeons familiar with the operative management of complex pelvic surgeries. A Massive Transfusion Pack with 4-6 units PRBCs, FFP and Platelets should be available (see OB Hemorrhage Care Guidelines: Checklist Format and Blood Product Replacement Best Practice Article). At the time of cesarean, the hysterotomy should be made away from the location of the placenta. In all but those with focal accretas, a hysterotomy — without disturbance of the placenta — is strongly advised. (7) Blood salvage equipment should also be considered where available. (9) The results of conservative surgery have been recently reviewed with many complications noted (e.g. infection, delayed hemorrhage, re-operation requiring hysterectomy, disseminated intravascular coagulation) and should only be considered in the most select situations. (10) Consultation with experienced surgeons (e.g. gynecologic oncologist) or referral to appropriate facilities is required when a provider lacks

appropriate support services or surgical experience with managing placenta accreta. The use of prophylactic intravascular balloon catheters for cesarean hysterectomy for placenta accreta is controversial as a recent large case control study (UC Irvine/Long Beach Memorial) showed no benefit. (11) If a focal placenta accreta is found (typically in the lower uterine segment at the delivery of a placenta previa) management options are broader and include over-sewing, fulguration and placement of an intrauterine compression balloon (with drainage through the cervix/vagina) for 24 hours.

RECOMMENDATIONS

SCREEN

1. Screen all women with prior cesarean birth for placenta previa with ultrasound. (2) (C)
2. Screen all women with placenta previa for accreta first with ultrasound, then with MRI if ultrasound results are suspicious or inconclusive. (4) (B)

COUNSEL

1. Counsel all patients with placenta accreta about delivery risks and complications and future infertility if hysterectomy is performed. (C)

PREPARE

1. Prepare a multi-disciplinary approach for delivery, including a plan for emergent surgery prior to scheduled delivery.
 - a. Planning should include primary OB surgeon, Blood Bank, perinatologist, anesthesiologist, gynecologic oncologist/experienced pelvic surgeon, labor & delivery nursing, operating room personnel, nursery and pediatric teams. (C)
2. Consider early delivery (32-36 weeks) before labor and after pretreatment with betamethasone for fetal lung maturity. (C)
3. Perform the delivery surgery in main OR with a surgical scrub team. (C)
4. Actively involve surgeon(s) with advanced skills for controlling heavy pelvic bleeding and repairing bladder or ureteral injury. (C)
5. Strongly consider hysterectomy (without removal of placenta) if no further children desired. (C)
6. Notify blood bank for potential of massive hemorrhage and ensure immediate availability of 4-6 units of PRBC, FFP, and platelets. (C)
7. The Committee was divided on the desirability for pre-placement of internal iliac artery balloon catheters with a recent large case control study (UC Irvine/Long Beach Memorial) showing no benefit. (11) (B)

EVIDENCE GRADING

Level of Evidence: B. Recommendations based on limited or inconsistent evidence

Level of Evidence: C. Recommendations based primarily on consensus and expert opinion

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