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# Abnormal placentation and role of OR/IR hybrid suite for cesarean delivery

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**Introduction:** Abnormal Placentation (AP) or accreta spectrum disorders carry high risk for intrapartum hemorrhage. Risk factors for AP are prior cesarean section, placenta previa, uterine anomalies, uterine surgery and multiparity. AP is reported to be the most common indication for peripartum hysterectomy and cause of hemorrhage. An obstacle to Interventional Radiology (IR) services is location away from labor and delivery. Four cases of IR/OR hybrid suite usage are reviewed in setting of suspected AP.

**Case Description**

**Case 1:** Suspected focal accreta to submucosal fibroid 33 y.o. G 2 P1001 , prior c/s focal area of adherent placenta at fundus with submucosal fibroid adherent to placenta. Given the concerns with bleeding at time of placental removal, patient had c/s at 37 weeks with delivery in hybrid suite with occlusion balloons. Blood loss was 800cc, uterus preserved. All did well.

**Case 2:** 35 y.o. G 3 p1001 C/S planned at 32 weeks given percreta, bulging lower uterine segment and pain. C/S performed in IR/OR hybrid suite. Occlusion balloons used and embolization performed. EBL was 4000 cc, 1135 cc in cell saver, 5 units of PRBC, 1 unit of platelets, 3 units of FFP, 3600 cc crystalloids. Hysterectomy performed. All did well.

**Case 3:** 33 y.o. G 2 P0010 33 weeks due to bleeding, placenta previa and accreta. Delivery in IR/OR hybrid suite with occlusion balloons, end embolization with gel foam. 2000 cc blood loss, preserved uterus. Next pregnancy 3 years later with previa and percreta, and urgent c/s for bleeding at 32 5/7 weeks gestation, hybrid suite was not available. C/S hysterectomy in main OR with 1200 cc blood loss and 1 liter from cell saver transfused. All did well.

**Case 4:** 35 y.o. G 3 p2002 with scheduled C/S at 34 weeks suspected increta, previous c/s x2, previa. C/S in IR//OR hybrid suite with balloons in place, not inflated. 3500 cc blood loss, 4 units transfused from cell saver, 1 unit of FFP, 6500 cc of crystalloid. Hysterectomy performed. All did well post op.

**Conclusion:** The OR/IR hybrid suite has significant utility in obstetrics in cases of AP and anticipated hemorrhage. Advanced interventions such as embolization are also helpful in decreasing blood loss. OR/IR hybrid suite usage in this setting for cesarean delivery in obstetric patients with AP, may also lead to uterine preservation through the combination of minimally invasive and standard surgical management.

**Key terms:** AP-abnormal placentation such as accreta, increta and percreta, IR-interventional radiology, ORoperating room, hybrid suite- IR/OR capable room, C/S- cesarean section, EBL- estimated blood loss, FFP- fresh frozen plasma, PRBC- packed red blood cells. The incidence of placenta accreta has increased and seems to parallel the increasing cesarean delivery rate. Researchers have reported the incidence of placenta accreta as 1 in 533 pregnancies for the period of 1982–2002 (5). This contrasts sharply with previous reports, which ranged from 1 in 4,027 pregnancies in the 1970s, increasing to 1 in 2,510 pregnancies in the 1980s

Interventional Radiology services have been shown to be a useful adjunct in cases of abnormal placentation. IR Balloons have been shown to lower pulse pressure and blood loss in complicated obstetrics cases and may assist in uterine preservation and lower incidence of massive transfusion. In traditional settings, placement of catheters in IR suite and then moving patient to the OR creates an obstacle as confirming proper placement with C-ARM in OR prior to inflating leads to an extra step in management. Using an IR/ OR suite avoids need for moving patient and then confirming proper placement prior to using.

**Key points in patient management**

- Patients with suspected abnormal placentation or previa referred to MFM.
- Detailed fetal sonogram performed for anatomy
- Patients with sonographic markers for accreta such as hypervascularity previa, lack of retroplacental clear space, lacunar spaces identified and counseled regarding risks for AP
- Consultations with urology, interventional radiology, blood back, per fusionist for cell saver technology, gynecologic oncology for surgical backup
- Patients have MRI in third trimester if concerns for percreta
- Delivery timing at 34-35 weeks scheduled unless indicated earlier.
- NICU consultation regarding prematurity risks for newborn
- Steroid administration at 33 weeks unless indicated earlier.
- Patient in OR/IR hybrid suite
- Multidisciplinary conference and plan in third trimester to allow planning for delivery

## Biography

June Murphy is currently working at Henry Ford Health System, USA