PLACENTA ACCRETA

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OBJECTIVES
Know the differences of classifications of placenta accreta/implantations
Know the diagnosis and management of placenta accreta
Know risk factors for placenta accreta

PLACENTA ACCRETA – WHEN ALL OR PART OF PLACENTA ATTACHES TO MYOMETRIUM (3 GRADES)

- **Accreta**
  - Chorionic villi attach to myometrium rather than restricted to the decidua basalis

- **Increta**
  - Chorionic villi invade into the myometrium

- **Percreta**
  - Chorionic villi invade through the myometrium (outside the uterus and attach to surrounding tissues)

FIGURE 17.7 PHYSIOLOGY OF ABNORMAL PLACENTAL IMPLANTATION

Partial or total loss of decidua basalis
Imperfect development or destruction of fibrinoid layer (Nitabuch layer)
Allows chorionic villi of placenta to attach to myometrium

INCIDENCE OF PLACENTA ACCRETA

1980’s – 0.8/1000 deliveries
2010 – 3/1000 deliveries (4 fold increase)

Primarily due to increased cesarean section rate
RISK FACTORS FOR PLACENTA ACCRETA

- Placenta previa
- Prior uterine scar (C-section, myomectomy)
- Maternal age/multiparity
- Prior uterine curettage
- Endometrial ablation
- Asherman Syndrome
- Uterine anomalies
- Uterine leiomyomata
- Hypertension of pregnancy
- Smoking

DIAGNOSIS OF PLACENTA ACCRETA

2nd trimester ultrasound remains the gold standard

TABLE 1
Frequency of placenta accreta according to number of cesarean deliveries and presence or absence of placenta previa

<table>
<thead>
<tr>
<th>Cesarean delivery</th>
<th>Placenta previa</th>
<th>No placenta previa</th>
</tr>
</thead>
<tbody>
<tr>
<td>First (primary)</td>
<td>3.3</td>
<td>0.03</td>
</tr>
<tr>
<td>Second</td>
<td>11</td>
<td>0.2</td>
</tr>
<tr>
<td>Third</td>
<td>40</td>
<td>0.1</td>
</tr>
<tr>
<td>Fourth</td>
<td>61</td>
<td>0.8</td>
</tr>
<tr>
<td>Fifth</td>
<td>67</td>
<td>0.8</td>
</tr>
<tr>
<td>Sixth</td>
<td>67</td>
<td>4.7</td>
</tr>
</tbody>
</table>

TABLE 2
Sonographic findings that have been associated with placenta accreta

1. Loss of normal hypoechoic retroplacental zone
2. Multiple vascular lacunae (irregular vascular spaces) within placenta, giving “Swiss cheese” appearance
3. Blunt ureters or placental tissue bridging uterine-placental margin, myometrial-bladder interface, or crossing uterine arteries
4. Retroplacental myometrial thickness of <1 mm
5. Numerous coherent vessels visualized with 3-dimensional power Doppler in basal view

ULTRASOUND DIAGNOSIS OF PLACENTA ACCRETA

- At 1st trimester
- At time of abortion <20wks
- Accuracy unreliable
- Anterior
- Diagnosis of a low lying placenta at the site of prior c/s and 1st trimester should undergo report u/s in 3rd trimester.

ULTRASOUND VS. MRI

- Ultrasound and MRI diagnoses were compared with final pathology and/or operative findings

Ultrasound
N=453
- Accurately predicted accreta in 30 of 39
- Sensitivity 0.77 / specificity 0.96
- Ruled out accreta 39% of 414

MRI
N=42
- Accurately predicted accreta 23 of 28
- Ruled out accreta in 14 of 14
- Sensitivity 0.88 specificity 1.0

DIAGNOSIS OF ACCRETA ULTRASOUND VS MRI

2006 J Obstet Gynecol; Vol 108. #3
- Presented at SMFM Feb 2006
- Univ. of Calif, San Diego from 2000-2005

453 women (previous c/s)
- Placenta previa
- Low lying anterior placenta
- Previous myomectomy

Assessed accuracy of u/s for diagnosis of placenta previa
Those suspicious for accreta by u/s were referred for MRI
RECOMMENDATIONS

Two stage protocol for women at risk for placenta accreta

- Ultrasound first
- MRI reserved for inconclusive u/s findings

MATERNAL MORBIDITY IN MANAGEMENT OF ACCRETA VIA INTERDISCIPLINARY TEAM


Retrospective cohort of all cases of placenta accreta in Utah 1996-2006

Interdisciplinary team at two tertiary care centers vs. 26 "community" hospitals

142 cases

- 79 multidisciplinary team
- 62 standard care

* Multidisciplinary team

- MFM / GynOnc / Interventional Radiologists
- Tertiary care blood bank

RESULTS

Using multivariable logistic regression analysis

<table>
<thead>
<tr>
<th>Team</th>
<th>Large volume blood transfusion</th>
<th>Reoperation with 7 days for bleeding</th>
<th>Composite early morbidity (ICU / transfusion / coagulopathy / ureteral injury / reoperation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team</td>
<td>43%</td>
<td>2%</td>
<td>47%</td>
</tr>
<tr>
<td>P</td>
<td>(p&lt;0.001)</td>
<td>(p=0.001)</td>
<td>(p=0.026)</td>
</tr>
<tr>
<td>Standard</td>
<td>61%</td>
<td>38%</td>
<td>74%</td>
</tr>
</tbody>
</table>

Conclusion

Maternal morbidity reduced in women with accreta managed at tertiary care center

TIMING STRATEGIES FOR DELIVERY IN PATIENTS WITH PREVIA AND ACCRETA

Northwestern University, Chicago, Obstetrics & Gynecology Vol. 116, No.1, Oct. 2010

Compared strategies of timing of delivery in previa with accreta

Which strategy resulted in best maternal outcome and least neonatal mortality

(Outcomes assessed)

- Maternal ICU stay
- Maternal mortality
- Infant mortality
- RDS
- PPH
- CP

Recommendation

- No benefit to be gained by expectant management beyond 37 wks with decision tree favoring delivery after 34-35 wks
- Those women not delivered by 36 wks, amnio for lung maturity did NOT improve outcome.

CASE PRESENTATION

32 YO G7 P5 at 22wks referred to Arkansas Reproductive Genetics Program (ARGP) at the Freeway Medical Center for consultation and level II ultrasound for previa.

Previous c/s x 3

History of LEEP

Smoker

D&C x 1
Normal level II ultrasound
No aneuploidy markers
Noted anterior placenta previa
Suspicious for accreta due to loss of sonolucent line and placental lacunae
MRI recommended to assess for percreta at 28-30 wks
MRI at 30w0d:

Impression: low-lying anterior placenta

Invading lower uterine segment and anterior lip of the cervix

Diagnosis of placenta increta

Focal area of percreta along right posterior-lateral aspect of uterus
Planned C/S at 39 wks. (Pt declined earlier delivery and her local MD refused to do surgery in home town)

- Planned for scheduled C/Hyst

Admitted 24 hours prior to surgery

- Seen by interventional radiology for internal iliac artery balloon catheter placement on morning of case

Consulted GynOnc for possible surgical assistance in OR to review imaging/findings of case

FINDINGS

Upon entering abdomen

- Entire lower uterine segment with evidence of percreta extending to the right adnexa and abutting the bladder, extending inferiorly to cervix and vagina
- Gyn Onc notified immediately
- High Vertical incision with delivery of vigorous male infant weighing 3960 grams, Apgar of 6/7 with normal cord gases

To OR at 9:00 AM

- MFM staff, MFM Fellow, Chief resident OB, chief resident of Gyn Onc service
- Main OR, blood bank and anesthesia consult
- Central line access, arterial line in place
- Anesthesiology staff with cardiothoracic specialty
- Patient placed under general anesthesia

IMMEDIATELY UPON DELIVERY

Cardiopulmonary collapse

- Code called
- Massive transfusion protocol initiated
- GynOnc scrubbed

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- Gyn Onc notified immediately
- High Vertical incision with delivery of vigorous male infant weighing 3960 grams, Apgar of 6/7 with normal cord gases
- Peds present
- Internal iliac balloon catheters inflated

6 HOURS LATER

Second Oncologist called in

- TAH/RSO/Cystotomy repair
- 12,000 cc EBL

Transfusion

- 21 PRBC
- 12 FFP
- 1 unit cryo
- 3 – 6 packs of platelets

Admitted to ICU – intubated

- IV fluids 4600 cc
- IV plasmalyte 4100 cc
- 12,000 cc EBL

Transfusion

- Tachycardic/hypotensive
- 2 units PRBC
- 7 FFP / 2 units platelets
- Bright red blood in foley → HH 5.9%/17.5%

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PATIENT TO INTERVENTIONAL RADIOLOGY

Bilateral embolism of anterior division of hypogastric arteries

Return from IR
- 7 units PRBC
- 6 units FFP
- H/H – 3.5%/10.7%

NEXT MORNING

Return to OR for worsening abdominal distension and abdominal compartment syndrome

9 more units PRBC

6 units FFP
- BP 90/60
- Pulse 150's
- Creatinine 1.0

OR FINDINGS

Acute intra-abdominal hemorrhage
Abdominal compartment syndrome
LSO performed
Reopened bladder and evacuated clot
Resected portion of vaginal cuff
Abdominal packing placed and left abdominal incision open with wound vac

EBL 8000 cc

NEXT DAY –

Return to OR to remove intra-abdominal packing and close fascia and wound

TOTALS

Total hospital LOS – 14 days

Discharge H/H 12/37%

Discharge Creatinine 0.5 (highest 1.2)

Total transfusion
- 64 units PRBC
- 41 units FFP
- 17 six-packs platelets
- 7 units cryoprecipitate
- TOTAL = 129 units blood products
Special thanks to Donna Eastham for converting my notebook scribbles into PowerPoint slides

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