Antepartum Hemorrhage

Definition
• Vaginal bleeding after 20 wks gestation

Incidence
• 2% to 5% of all pregnancies

Morbidity and Mortality
• A leading cause of maternal death in Canada
• Increased risk of preterm birth

Etiology of APH
• Placenta
  – abruption
  – previa
• Vasa previa
• Cervical
• Other
  – abnormal coagulation
  – lower genital tract lesion
  – unclassified

>50% of hemorrhage related death

Placenta Previa

Incidence
• Approximately 1 in 200 births

Classification
• Placenta Previa: placenta touching or covering internal os
• Low-lying Previa: leading edge of placenta within 2 cm of the internal os and not reaching the internal os

Placenta Previa – Risk Factors
• Previous placenta previa
• Previous CS delivery (< 12 mths between pregnancies)
• Previous uterine surgery
• Advanced maternal age (≥ 35)
• Multiparity (≥ 3)
• Smoking and cocaine use in pregnancy
• Multiple gestation
• In vitro fertilization

Placenta Previa – Diagnosis using Ultrasound
• Routine 2nd trimester US detects most placenta previa
• If previa is suspected on TAS, TVS is warranted to determine placental location
• If placenta reaches or crosses the internal os on TVS in 2nd trimester, follow-up U/S recommended to determine placental localization nearer term
• The later in gestation the previa is diagnosed the more likely it is to persist as a previa
Antepartum Hemorrhage

Placenta Previa – Management

- TVS should be repeated in the 3rd trimester at 28 to 30 wks gestation to re-establish the position of the leading edge of the placenta
- Likelihood of safe vaginal delivery can be predicted using a TVS at 35 – 36 wks
- Distance > 2 cm is considered safe for vaginal delivery
- It is acceptable to offer labour in hospital with a TVS distance of 11 to 20 mm from the inferior placental margin to the internal os at 35 wks to 36 wks

Placenta Previa - Management

- Hemodynamically stable women with bleeding remote from term – expectant management
- Consider steroids
- 75% will experience at least one episode of bleeding around 29 wks
- Most will deliver at a median of 36 weeks

Placenta Previa – Delivery

- CS in an institution where blood transfusions and adult intensive care is available
- Consent for possible hysterectomy
- Recommended when:
  - 37 weeks gestation
  - fetal lungs maturity confirmed (before 37 weeks)
  - severe maternal hemorrhage
  - abnormal FHS at any gestation

Low-lying Placenta (11-20mm) Trial of Vaginal Birth

- Limit vaginal exams
- No membrane sweeping
- Avoid mechanical methods of cervical ripening
- IV access
- Group, Screen and cross-match
- Be prepared for hemorrhage
- Be ready for emergency CS and immediate blood transfusions

Abnormal Placentation

Placenta Accreta
- Villus attachment to the myometrium resulting in loss of the normal cleavage plane

Placenta Increta
- Trophoblast invasion into the myometrium

Placenta Percreta
- Invasion through the entire wall of the uterus and beyond the serosa of the myometrium, where it could invade the bladder and other pelvic organs

Placenta Accreta

- ↑ incidence due to ↑ CS rates
- Risk factors:
  - placenta previa +/- prior uterine surgery
  - prior CS or any uterine surgery
  - Asherman’s syndrome
  - submucous leiomyomata (fibroids)
  - maternal age > 35 years
**Placenta Accreta**
- Ideally diagnosed antenatally via U/S + MRI
- Deliver in a centre with adequate resources
- Management requires a multidisciplinary team
- Caesarean hysterectomy is required in up to 72% of cases
- Conservative approach in selected patients
- In the absence of clinical complications, the optimal time of delivery is between 34 and 35 weeks

**Placental Abruption – Definition**
- Premature separation of placenta from uterine wall
- 0.5% – 1% of all pregnancies

**Placental Abruption – Predisposing Factors**
- Prior abruption
- Thrombophilia, iron deficiency
- Preterm rupture of membranes
- Hypertension
- Overdistended uterus
- Maternal age and parity
- Smoking and cocaine abuse
- Trauma
- Previous CS delivery (interval < 12 months)

**Clinical Features**
- **Placental Abruption**
  - Abdominal pain or backache (often unremitting)
  - Uterus tender, irritable, increased tone
  - Hemodynamic status may be inconsistent with blood loss
  - Possible atypical/abnormal fetal surveillance
  - May have coagulopathy
  - Ultrasound: does not reliably diagnose an abruption
- **Placenta Previa**
  - Painless
  - Uterus non-tender, not irritable, soft
  - Maternal hemodynamic status – blood loss
  - Possible malpresentation or high presenting part
  - FH usually normal
  - Previa on ultrasound; TVS considered safe, gold standard

**Method and Timing of Delivery**
- **Abruption with no fetal compromise**
  - Conservative mgmt if preterm
  - Initiate delivery if mature, need EFM
- **Abruption with fetal compromise**
  - Emerg delivery regardless of GA
  - Induce if favourable
  - C/S if unfavourable or abn EFM
- **Abruption and fetal death**
  - Initiate delivery process
  - Be vigilant for DIC

**Vasa Previa – Definition**
- Fetal vessels in the membranes cross cervical os
- Can be found with:
  - velamentous insertion of the cord
  - succenturiate lobe
- Increased incidence in:
  - twins
  - previa
  - IVF
Antepartum Hemorrhage

Vasa Previa – Diagnosis Antepartum
- If the placenta is low lying or there is multiple pregnancy, the placental cord insertion is marginal, or pregnancy following IVF, a careful assessment of the placental cord insertion during the second trimester ultrasound should be done
- Transvaginal ultrasound if high risk for vasa previa
  - low or velamentous insertion of the cord
  - bilobed or succenturiate placenta
  - vaginal bleeding

Vasa Previa – Management
- Consider steroids at 28 – 30 wks
- Admission at 30 weeks to 32 weeks to a center with a minimum Level II capability is recommended
- Antenatal consultation with paediatrics
- Elective C/S recommended at 35 – 36 wks
- Communicate diagnosis to health care team

Vasa Previa – Intrapartum
- Acute painless vaginal bleeding
- Abrupt change in FHR pattern

Vasa Previa – Prognosis
- Fetal mortality estimated to be as high as 60% when undiagnosed
- When antenatal diagnosis is made, up to 97% neonatal survival rate is possible

Diagnosis and Management of APH
- Evaluate uterine tone and activity
- Determine hemodynamic stability
- Avoid a digital cervical exam until placenta previa ruled out by ultrasound
- History and physical
  - evaluate maternal and fetal status (EFM)
  - review previous ultrasound report
- Perform an ultrasound to rule out placenta previa, if possible, prior to speculum exam

Laboratory
- Cross match
- CBC, blood type, Rh
- Kleihauer-Betke
- Bedside clot test
- Other investigations dictated by presence of co-morbid conditions (e.g., hypertension)
**Vaginal Bleeding**

**Maternal-Fetal Assessment**
- Mother or fetus **unstable**
  - Hemodynamic Resuscitation
  - Delivery
- Mother or fetus **stable**
  - Maternal / fetal Monitoring
  - U/S ± vaginal exam
  - Expectant
    - consider ongoing loss, etiology, gestation

**Management – CABs**
- Get HELP!
- Continuously assess mother and fetus
- Early and aggressive
  - oxygen
  - large bore IV x 2 – RL, NS (LOTS!)
  - transfusion
- Follow hemoglobin and coagulation status
- Foley catheter
- Kleihauer-Betke if suspected abruption
- A massive transfusion protocol is important

**Management – Stable Mother and Fetus**
- Timing of delivery depends on
  - stability
  - diagnosis
  - gestational age
  - local resources
  - all patients with APH at risk for recurrent bleeding

**Management: Special Considerations**

**Abruption**
- Fetal demise: ↑ risk of DIC

**Previa**
- Lower segment scar: ↑ risk of accreta

✓ Rh immune globulin for unsensitized Rh negative women

**Conclusions**
- Assess maternal status and stability
- Assess fetal well-being
- Resuscitate early
- Assess cause of bleeding
- Expectant management if indicated
- Delivery based on maternal or fetal status and local resources