POSTPARTUM HEMORRHAGE

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Definition of Postpartum Hemorrhage

- 500 cc in first 24 hours postpartum (SVD)
- 1000 cc in first 24 hours postpartum (C/S)
- ↓ in Hct by 10% over pre-delivery level
- What is normal blood loss?
  - 500 – 600 cc (with laceration/episiotomy)

Incidence and Outcomes of PPH

- Prevalence of 10-14%
- Maternal Mortality
  - 1/3 of maternal deaths in Africa and Asia
  - 1-5% of maternal deaths in US

Causes of Postpartum Hemorrhage

- Uterine atony (80%)
- Lacerations (cervix, vagina, uterus)
- Coagulopathies (DIC, HELLP, Von Willebrands)
- Abnormal placentation
  - Accreta, increta, percreta
  - Previa
- Uterine inversion

Postpartum Hemorrhage is Associated With……

- Previous postpartum hemorrhage
- Overdistended uterus (twins, large baby, polyhydramnios)
- Medications (Magnesium sulfate, nifedipine, some anesthetics)
- Infection
- Grand multiparity

PPH: Also Associated With……

- Uterine abnormalities (e.g. myomas)
- Operative delivery
- Dysfunctional labor
  - Prolonged
  - Precipitous
  - Oxytocin
- Anemia
- Mismanagement of third stage
Making the Diagnosis

• Always keep track of bleeding
• Watch fundus
• Watch vital signs
  – If shocky, you are WAY behind (20% blood volume)

Management of PPH

• Anticipate (active management)
• IV access
  – Risk factors
  – Bad veins (“hard stick,” IV drug use)
  – Jehovah’s Witness
• Make sure RN prepared
  – IV running
  – Meds available

Medical Management of PPH

• Assume atony; manage as atony until uterus firm.
• Massage uterus; explore lower segment for clots
• Oxytocin
  – IV: 20-30 units/1,000 cc
  – IM: 10 units
• Misoprostol: 800 mug per rectum
• Methergine: 0.2 mg IM (ø HTN, migrane, Reynauds)
• Hemabate: 1 amp (250 ug)IM, IV or intrauterine
• Reinspect placenta; explore uterus (antibiotics)
• Empty bladder prn

Retained Placenta

• > 30 minutes after delivery
• May bleed (or not)
• Consider abnormal placentation
• Manual removal (unless emergent)
  – Controlled setting
  – Anesthesia/analgesia
  – MD back up available
  – Antisepsis/Antibiotics

Management of PPH

• Check for lacerations
• Labs
  – T&C 4 units PRBCs
  – Coag labs (platelets, fibrinogen, PT, PTT)
• Bimanual compression
• Call for help!!
Placenta Accreta, Increta, Percreta

- Accreta: Placental villi attached to myometrium
- Percreta: Placental villi invade myometrium
- Increta: Placental villi penetrate myometrium
- May involve one, some or all cotelydons

Morbidity Associated with Abnormal Placental Adherence

- Severe hemorrhage
- Uterine perforation
- Infection

Associations with Abnormal Placental Adherence

- Placenta previa (1/3)
- Prior C/S (1/4)
- History of curettage (1/4)
- Parity (1/4 > 6)

Diagnosis of Accreta, Increta, Percreta

- Antepartum hemorrhage
- Ultrasound
- Usually hemorrhage at the time of delivery

Management of Accreta, Increta, Percreta

- Manual removal with uterine packing
- Leave in place
- Hysterectomy

Uterine Inversion

- With faulty separation, uterus invaginates and delivers itself inside out
- Associated with:
  - Fundal implantation
  - Excessive cord traction
  - Vigorous fundal pressure
- Can be complete or incomplete
  - Complete: fundus extends beyond cervix
  - Uterus does not extend beyond cervix (easily missed)
Management of Uterine Inversion

- Replacement
  - Use fist
  - Leave hand in
  - Give oxytocin
  - Do NOT remove placenta
  - To OR
- Call for help!
- Management of shock
  - Fluids
  - T&C
  - Trendelenberg
  - MD support for pressors

Source of Bleeding

- Vulvar: usually from pudendal artery or its branches (posterior rectal, transverse perineal, posterior labial)
- Vaginal: descending branch of uterine artery

Risk Factors for Hematoma

- Lacerations
- Episiotomy
- Frequently none

Postpartum Hematoma

- Incidence: 1/300 – 1/1,500
- Types:
  - Vulvar
  - Vulvovaginal
  - Vaginal
  - Supravaginal or subperitoneal (retroperitoneal)
  - Broad ligament

Diagnosis of Hematoma

- PAIN
- Rectal pressure
- Inability to void
- Typically within a few hours of birth
- Not always visible
- If broad ligament, uterine displacement possible

Blood Loss with Hematoma

- Typically exceeds clinical estimate
- May exceed 500 cc prior to dx
- May dissect through tissues
Management of Hematoma

- If no change in vital signs, observe
  - Note size
  - If growing, may require surgery
  - Pain management
- If shock, requires surgery
  - Risk of infection
- T&C

Cervical Laceration

- May be unilateral or bilateral
- Frequently at 3:00 and 6:00
- Repair
  - Oxorn says 1 cm deep
  - Williams say 2 cm

Cervical Laceration Risk Factors

- Precipitate labor
- Rigid or scarred cervix
- Operative delivery
- Breech extraction
- Macrosomia

Cervical Laceration Repair

- Interrupteds or Figure of Eight
- Requires two people
- Good anesthesia
- 0 or 00 suture

Shock

- Different in pregnancy because of ↑ blood volume
- Frequently hemodynamically stable until loss of 20-25% of blood volume
- ↓ blood pressure and ↑ pulse are late signs
- Get help!!!
Fluid replacement

• May need two IV sites
• Crystalloid solution: 2-3 x blood loss
• PRBCs – T&C for at least four units
  – Check coags after 6-8 units
  – Check potassium after 4-6 units
  – Massive transfusion protocol
• Keep urine output at least 30cc/hr