Postpartum Hemorrhage (PPH)

The Four Ts

Tone: Uterine Atony

- ✓ 70% of cases
- ✓ Perform uterine massage
- ✓ Perform bimanual compression
- ✓ Medications
  - Oxytocin/Syntocinon (10 units IV or IM; 10-40 units in 1000 mL saline at 250 mL/hr)
  - Methylergonovine (0.2 mg IM or Ergometrine 0.5 mg IM) use with caution in hypertensives
  - Prostaglandin F2α 0.25 mg IM or intramyometrial; may repeat every 15 minutes up to 8 doses but consider surgery after 2 doses
  - Misoprostol 800 mcg SL, PO, or PR

Trauma: Cervix or Vagina

- ✓ 20% of PPH cases
- ✓ Examine and repair

Tissue: Retained Placenta

Prevent with active third-stage management

- ✓ 10% of PPH cases
- ✓ Manual removal
- ✓ Explore for fragments

Thrombin: Coagulopathy

- ✓ 1% of PPH cases
- ✓ Confirm with bedside clot test
- ✓ Replace blood products

Management of Massive PPH Organizing the Team

HEAD

- ✓ Check airway
- ✓ Check breathing
- ✓ Administer oxygen
- ✓ Lie flat
- ✓ Note time of relevant events

ARMS

- ✓ Check pulse and BP
- ✓ Establish LARGE BORE IV X2
- ✓ Check blood counts, clotting and crossmatch 4-6 units
- ✓ Start FLUID RESUSCITATION if required with 2 liters crystalloid
- ✓ Drugs:
  - Oxytocin/Syntocinon
  - Methylergonovine/Ergometrine
  - Prostaglandin F2α (Consider surgery if >2 doses required)
  - Misoprostol

UTERUS START HERE — CALL FOR HELP

- ✓ Massage uterus to stimulate contraction
- ✓ COORDINATE:
  - Helper 1 at "HEAD"
  - Helper 2 and 3 at "ARMS"
- ✓ If bladder full or palpable — empty with catheter
- ✓ If atony persists — apply bimanual compression
- ✓ Review other causes — 4 Ts (Tone, Trauma, Tissue, Thrombin)
- ✓ Move to surgery early if bleeding persists

HELPERR

for Shoulder Dystocia

H Call for **H**elp!

E **E**valuate for **E**pisiotomy

L **L**egs — McRoberts Maneuver

P Suprapubic **P**ressure

E **E**nter: rotational maneuvers

R **R**emove the posterior arm

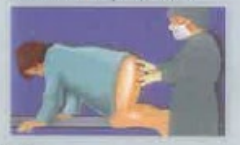
R **R**oll the patient to her hands and knees

Shoulder Dystocia HELPERR Techniques

Combine McRoberts Maneuver with suprapubic pressure. This will resolve most cases.

"Enter" maneuvers:

Roll the patient: "Gaskin Maneuver"



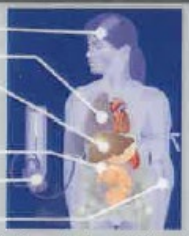
Removing the posterior arm:

Follow the posterior arm to the elbow

Flex arm at the elbow

Sweep forearm across the chest without pulling directly on the hand

Preeclampsia with Severe Features



Magnesium Dosing for Preeclampsia with Severe Features/Eclampsia

- 4 to 6 g IV load over 15 to 20 minutes, followed by infusion of 2 g/hour
- Monitor serum level if Cr >0.9, urine output <35 mL/hour, loss of patellar reflexes, or symptoms of magnesium toxicity

Treatment of Severe Blood Pressures

Treat if sustained BP elevation ≥160 mm Hg systolic or ≥110 mm Hg diastolic on two measurements, 15 minutes apart

Post-treatment target blood pressure 140–150/90–100 mm Hg

- Labetalol
  - Initial dose: 20 mg IV bolus over 2 minutes
  - If BP remains ≥160/110 mm Hg, then repeat 10 minutes later with 40 mg IV and 10 minutes later with 80 mg IV. If BP remains ≥160/110 mm Hg, switch to hydralazine
  - Maximum daily IV dose 300 mg
- Hydralazine
  - Initial dose: 5-10 mg IV over 2 minutes. After 20 minutes, if BP remains ≥160/110 mm Hg, may repeat with 10 mg IV
- Nifedipine
  - 10 to 20 mg PO; repeat in 30 minutes if BP remains elevated

CAREFUL:

Vaginal Breech Delivery

C – **C**heck for presentation-palpate buttocks and feel for foot below; **C**heck for full dilation. **C**heck for cord prolapse (if membranes ruptured).

A – **A**sk for Help (skilled clinician, neonatal assistance, Piper forceps, and move to appropriate delivery site); **A**wait umbilicus before any traction on fetus; maintain sacrum **A**nterior.

R – **R**otate for arms if they don't deliver spontaneously with Lovset maneuver (during rotation, hands are placed on infant's hips and pelvis). Sweep arm down if needed.

E – **E**nter for Mauriceau-Smellie-Veit maneuver (MSV) once nape of neck is visualized. Can let baby "hang" for up to 20 seconds to facilitate flexion and descent.

F – **F**lex head: Hand on maxilla, hand on occiput, assistant with suprapubic pressure if needed to assist with flexion.

U – Back **U**p (sacrum anterior): Maintain sacrum anterior from the time the umbilicus is delivered until the head is delivered.

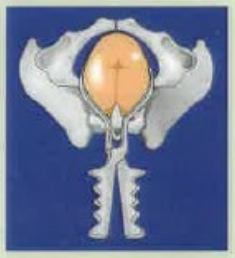
L – **L**ift baby onto mother or allow for delayed cord clamping (if appropriate).

Forceps Essentials and Safety

Definitions

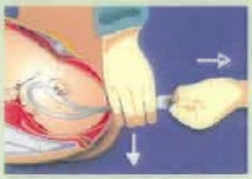
- ✓ Outlet: Fetal skull on pelvic floor; scalp visible between contractions
- ✓ Low: Fetal skull at, or below, +2 station
- ✓ Mid: Head engaged, but above +2 station (Midforceps application not taught in ALSO course)

Position Forceps for Safety



- ✓ Posterior fontanelle midway between shanks, 1 cm above plane of shanks
- ✓ Fenestrations admit no more than one fingertip
- ✓ Sutures: lambdoidal above, and equidistant from, upper surface of each blade; sagittal suture is midline

Pajot's Maneuver



- ✓ Axis traction follows pelvic curve
- ✓ Initial traction downward, then sweeping in large, J-shaped arc
- ✓ Opposite hand exerts downward traction, causing two vectors of force: horizontal outward and vertical downward

FORCEPS APPLICATION

A B C D E F G H I J

A **A**ddress the patient
Ask for help
Anesthesia adequate?

B **B**ladder empty?

C **C**ervix must be completely dilated

D **D**etermine position of the head
Think of shoulder **D**ystocia
Review the HELPERR Mnemonic

E **E**quipment ready

F **F**orceps ready

G **G**entle traction

H **H**andle elevated to follow the "j" shaped pelvic curve

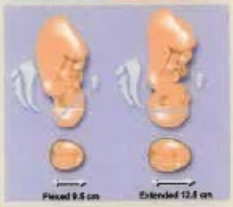
I Evaluate for **I**ncision for a possible episiotomy when the perineum distends

J Remove forceps when the **J**aw is reachable

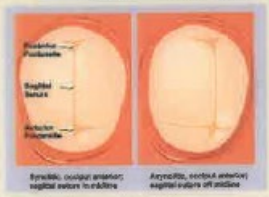
Vacuum Use and Safety Tips

Both bell-shaped and mushroom-shaped cups can be folded to facilitate insertion

Vacuum extraction must be performed to promote flexion of the fetal head. Flexing the head reduces the diameter of the head that must pass through the pelvic outlet.



If the infant's head is asynclitic, the sagittal suture will be located lateral to the midline. Placement of the cup on the flexion point will require that the cup be positioned lateral to the midline so that it is located over the sagittal suture.



VACUUM APPLICATION

A B C D E F G H I J

A Address the patient
Ask for help
Anesthesia adequate?

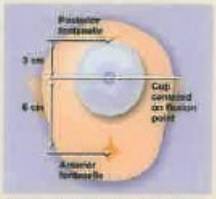
B Bladder empty?

C Cervix must be completely dilated

D Determine position of the head
Think of shoulder dystocia
Review the HELPERR Mnemonic

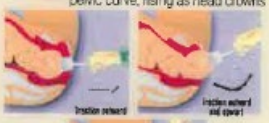
E Equipment ready
Extractor ready

F Place cup on **F**lexion point
Feel for maternal tissue



Proper cup placement on the flexion point is essential for safety and efficiency. Traction centered on the flexion point helps keep the neck flexed

G Gentle traction following the pelvic curve, rising as head crowns



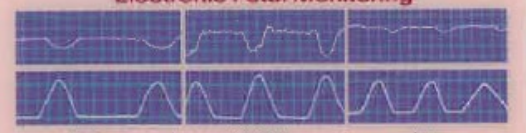
H **H**alt traction between contractions
Halt procedure if cup disengages 3 times
Halt if no progress in 3 pulls
Halt procedure after 20 minutes of use
- ✓ Be prepared to abandon the procedure and move to cesarean
- ✓ Avoid prolonged use beyond the "Halt" guidelines
- ✓ Avoid pivoting and rocking motions

I Incision: Evaluate for episiotomy when head is crowning (might not be necessary)

J Remove the vacuum cup when the **J**aw is reachable

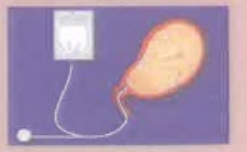
Intermittent Auscultation is appropriate for healthy women with uncomplicated pregnancy. In the active stages of labor, intermittent auscultation should occur after a contraction, for a minimum of 60 seconds, and at least every 15 minutes in the first stage and every 5 minutes in the second stage. Continuous electronic monitoring is recommended if there is evidence on auscultation of a baseline less than 110 bpm or greater than 160 bpm or if there is evidence on auscultation of any decelerations or if any intrapartum risk factors develop.

Electronic Fetal Monitoring



Early Decelerations	Variable Decelerations	Late Decelerations
Causes	**Causes**	
Head compression	Cord compression	Uteroplacental Insufficiency
Intervention	**Intervention**	
None	Reposition mother Oxygen IV Fluids Reduce or Stop Oxytocin Amnioinfusion for recurrent variable decelerations Vaginal exam for cord prolapse	

Amnioinfusion for repetitive variable decelerations: Infuse 250 to 500 mL saline through intrauterine pressure catheter and follow with 50 to 60 mL per hour drip.



DR C BRAVADO

for the interpretation of FHR tracings

DR Define **R**isk – "low" or "high"

C **C**ontractions – comment on frequency, etc.

BRa **Ba**seline **Ra**te – bradycardia, normal 110-160 bpm, or tachycardia

V **V**ariability – marked (>25 bpm), moderate (6-25 bpm), minimal (1-5 bpm), or absent. Minimal and absent are concerning.

A **A**ccelerations – present or absent (at least greater than or equal to a 15 beat change from the baseline lasting greater than or equal to 15 seconds)

D **D**ecelerations – "early," "variable," or "late"

O **O**verall – assessment (Category I/II/III) and plan of management