# OB Sim Day Teaching Points

## Shoulder dystocia

#  Image result for shoulder dystocia

* Failure of the fetal shoulders to clear after the head is delivered
	+ Occurs in 0.6 to 2% of all vaginal deliveries
	+ Diagnosed in the intrapartum period; may not be predictable based on prenatal data
* Rare obstetric emergency, unpredictable
* Serious potential harm for morbidity for mother and baby, esp brachial plexus injury, may be exacerbated by inappropriate management
* Maternal and fetal factors leading to this condition:
	+ *Maternal factors:* DM, obesity, multiparity, precipitous or protracted labor
	+ *Fetal factors*: Macrosomia, post-dates
* Complications include
	+ *Fetal:* Brachial plexus injuries, humeral/clavicular fractures, aspiration, hypoxic brain injury (from cord compression or compression of the lungs)
	+ *Maternal:* Post-partum hemorrhage, vaginal, perineal or sphincter tears, incontinence
* **Diagnosis**: Clinical – when the shoulder cannot be delivered and delivery arrests
	+ Fetus may “retract” into the perineum (“turtle sign”).
* **Management:**
	+ First things first – call for help! OB, NICU/PICU team, anesthesia
	+ Initial steps – increase the AP diameter of the passage
		- Cut an episiotomy and drain the bladder with a Foley
	+ 1st maneuver: McRoberts’ maneuver
		- Flexion/hyperflexion of the maternal thighs in the knee to chest position.
		- Successful in up to 40% of cases when used alone



* + Next step: Suprapubic pressure to push the anterior shoulder under the pubis
		- ***Not*** fundal pressure



* + If that fails:
		- Rubin’s maneuver: push the most accessible shoulder to the fetal chest (transabdominal, via the introitus or through the episiotomy)



* + - Wood’s corkscrew maneuver: rotate the fetus 180 degrees to release the impacted shoulder



* + - Pull on the posterior arm
	+ Next??
		- Break the clavicle, symphisotomy, Zavanelli maneuver (push the baby back in), Gaskin all-fours maneuver

## Postpartum hemorrhage

* Occurs in 1-5% of births in US
* EBL > 1000ml
* Causes: 4Ts
	+ Tone: Usually result of uterine atony, 80%
	+ Trauma: Lacerations, surgical incisions, uterine rupture
	+ Thrombin: Coagulopathy leading to consumption of clotting factors and hemodilution of remaining clotting factors
	+ Tissue: Retained placenta
* Risk factors: retained or adherent placenta, abnl placentation, prolonged/failure to progress labor, instrumental delivery, large gestational age newborn, hypertensive disorders (pre/eclampsia, HELLP), induction of labor, fetal demise
* Maneuvers to manage
	+ Bimanual uterine massage 
	+ 1st line: Oxytocin 10-40 units diluted in IVF, (typically 40 units in 1L NS or LR) given IV adjust rate to control uterine atony, or 10 units IM if no IV access yet
	+ 2nd line: Misoprostol (Cytotec, PGE1) 400 mcg SL or 1000 mcg rectal
	+ 3rd line: Carboprost (Hemabate) 0.25 mg IM q15min max 8 doses (if no asthma hx)
	+ 3rd line: Methylergonovine (Methergine) 0.2 mg IM repeat Q2-4 hrs (if no HTN, CAD, Raynaud’s) 🡪 Trick to remember “Meth” is bad for your heart
	+ Fluid resuscitate & transfuse:
		- Blood products, MTP
		- +/- Cryoprecipitate (rich w/ fibrinogen), or fibrinogen concentrate (RiaSTAP) to correct coagulopathy
	+ Uterine balloon tamponade (commercially available, or improvised with #24 Foley w/ 30ml balloon, Blakemore), packing
* Consider amniotic fluid embolism, sending DIC panel

## Ill-appearing neonate

* Key things to do during first 5 minutes of neonatal resuscitation
* Updated NRP guidelines 2015 <http://circ.ahajournals.org/content/132/18_suppl_2/S543.long>



* **For babies born precipitously in ED, always ask: 1) Term? 2) Good tone? 3) Breathing or crying?**
	+ If yes to all 3Qs, consider delaying cord clamping and hand baby to mother for skin-to-skin contact while keeping baby warm and dry.
		- Clamping of cord should be delayed 30-60 sec unless child requires immediate resuscitation
		- Associated with less IVH, NEC, better BPs and blood volume, but a/w more phototherapy requirement
	+ If no to any of Qs, cut cord and begin resuscitation by:
		- Taking baby to **warmer** (make sure it’s on!, plastic bag from neck down) goal temp 36.5-37.5
		- Bulb syringe **suction** to clear secretions,
		- Dry, **stimulate**. Ventilate/oxygenate as needed.
		- Note time, document APGAR.
* Cutaneous temp monitor on liver – largest organ provides most consistent measurement. Hypothermia increases risk of intraventricular hemorrhage, respiratory issues, hypoglycemia, and late onset sepsis.
* Meconium aspiration no longer empirically intubated, treat similar to other babies with stimulation, suctioning, PPV as needed. Immediate intubation thought to delay resuscitation

**Resuscitating a neonate: HR, RR, Pox**

* **HR**: Detecting HR difficult, 3 lead ECG best, umbilical cord stethoscope alternate but not as accurate
	+ If bradycardic HR <60, start chest compressions, thumb encircling chest wall, 3:1.



* + If not already done, intubate baby
	+ Epi 1:10,000 concentration, dose 0.01 mg to 0.03 mg/kg IV, or 0.05 to 0.1 mg/kg via ETT
* **RR/Pulse ox** – low oxygen sat is normal in first few minutes of life. Increases by 5% every minute of life. Place monitor on R palm/wrist for pre-ductal measurement, reflects blood that is going to the brain.
	+ **Normal preductal (right hand) O2 Sat**
	+ Resuscitation with room air (FiO2 21%) initially
	+ Give supplemental O2 - increase FiO2 if not achieving normal saturation or has a HR<100.
	+ PPV using BVM to RR 40-60 for 30 sec, CPAP
	+ If need for CPR, then intubated baby
* **Intubation:**

|  |  |
| --- | --- |
| **ETT = [age/4+4]** | **Laryngoscope blade** |
| <28 wks 2.5 | Pre-term 0  |
| 28-34 wks 3.0 | Term 1 |
| 34-38 wks 3.5  |  |
| >38 wks 3.5 to 4 | PEEP 5 |
| Depth 3xETT size to lip |  |

* **Umbilical vein catheter:** (PED Rm 4 has BOA cart w/ UVC kit)
	+ <http://emedicine.medscape.com/article/940865-overview>
	+ <http://www.fprmed.com/Pages/Procedures/UmbilicalVein_Cath.html>
	+ Smiley face: 2 eyes = umbilical arteries, flat mouth = vein. Insert catheter into vein 2-4cm until blood flow achieved
	+ DIY UVC kit – 5 Fr feeding tube, 11 blade scalpel, hemostats, forceps, 3 way stop cock, 10ml flush, umbilical tie

 



* Why does baby need resuscitation?
	+ Shock? Blood or volume? Give transfusion or IVF bolus as indicated, 10ml/kg, repeat prn
	+ Uterine rupture or abruption?
	+ Accident with umbilical cord?
	+ Hypoglycemic? 2ml/kg of D10 as initial bolus, then D10W maintenance IVF at 80ml/kg per day.