Taking care of patients who have non-reassuring pattern

- A non-reassuring pattern is:
  - no variability
  - less than 2 accelerations
  - decelerations
- In antepartum setting, you are looking at variable and accelerations
- Parameters for 28-32 weeks is different than 32 weeks or greater
- What about in labor?
  - looking for late decels (these are bad)
  - variability is THE most important thing!
    - moderate variability shows the CNS is intact
    - absent variability is no bueno...this would be a big issue if it was moderate before and now has become
      absent. If pt had medication, then this may not be so much of a concern b/c the meds affects the baby.
    - minimal may be bad (probably is)
    - marked is also not good
- Category 1: has variability, maybe a random decel (but most likely none), has accelerations
- Category 2: starting to get into a little gray area; physician can proceed forward with usual plan of care; moderate
  or minimal variability; may have recurring decels (of any type);
- Category 3: absent or minimal variability with repetitive late decels; baby is not coping
- What’s the first thing you would do if pt had repetitive variable decels?
  - reposition, increase IV, put Oxygen on mom, call doc (You will reposition b/c the variable decels are d/t cord
    compression).
  - You would give O2 if she had decreased variability (according to Dr. Ferguson)
  - Baby can get late decels from mom lying on her back (so position change), or from having low BP (so give IV
    bolus).

Things you need for precipitous birth

- IV
- Oxygen
- BOA kit (Birth on Arrival kit)

What kind of risks are involved with precipitous birth?

- Tearing at perineum
- Hemorrhage d/t lacerations and such
- Pneumothorax (not in book!). This can happen to baby when he takes his first breath.
- Low APGAR scores
- Meconium aspiration
- Brachial palsy

What is considered a post-date birth? 42 weeks...

- These women will get misoprostol or pitocin induction (make sure contractions aren’t too close together, monitor for
  fetal distress; mom will need an epidural b/c pitocin hurts; potential post-delivery problems for baby r/t epidural;
  hemorrhage can happen PP b/c sites are saturated with pitocin already and mom isn’t going to contract very well;
  non-reassuring patterns b/c BOW broken causes temps to go up, resting tone too high and contractions too close
  together can cause fetal distress;
  - High-Dose and Low-Dose Pitocin
    - Start out at around 4, and go up in “jumps” to get woman in labor...or can go up gradually I guess? See book.
      Basically RNs utilize a protocol for this, but the idea is to start low and titrate accordingly.
    - Baby is most likely going to be large with post-date moms
      - Shoulder dystocia, brachial palsy (whatever it’s called)
  - May have amniotomy (infection)
  - C/S...and all the complications
  - Maternal anxiety
See book for shoulder presentations and such...she says the book does a good job on this.

**Twin presentation**
- One can be vertex and the other can be breech
- What they can do for the breech twin is do an internal rotation of the baby. This is usually the 2nd baby.

**Macrosomia (> 4500 grams)**
- Shoulder dystocia
- Hemorrhage
- Don’t know if pelvis is adequate, mom may need C/S
- McRobert’s maneuver if head comes out and shoulder doesn’t.
  - Pull mom’s legs back to open pelvis more, this can help get baby out; also put pressure above pubic bone to dislodge the shoulder (but can break the clavicle)
- U/S is not reliable in establishing fetal weight

**Amniotic Fluid Embolus**
- Pretty rare, but mortality rate is very high (61-81%)
- Mom gets amniotic fluid from baby that has crossed over into maternal circulation
- Causes circulatory collapse and system-wide problems that go into DIC
- Occurrence = 1:20,000 to 1:30,000 live births
- Moms usually end up going to ICU, will probably be on vent
- Teach mom to tell you if she has any difficulty breathing...this is serious!

**Hydramnios (fluid > 2000 ml)**
- May be related to congenital abnormalities
- Diabetes mom if BS is out of control; baby pees a lot b/c there is too much glucose
- Twins can have this also
- Can be chronic or acute (20-24 weeks)
- Mom may have difficulty breathing d/t big uterus; may remove some of the fluid
- Big issue in labor is that baby is floating around a lot and don’t engage real well. If baby doesn’t engage, then can have cord prolapse when BOW ruptures.

**Oligohydramnios (fluid < 500 ml)**
- Cause unknown
- Seen in post-maturity and IUGR (IUGR is usually r/t malformation in placenta, can be r/t PIH and placenta not getting good blood flow, so smoking can cause this also; two types of IUGR...assymetrical and symmetrical. Symmetrical means baby is small but proportionate (< 10% in growth); with assymetrical, the head is bigger than the abdomen and femur length...baby looks really skinny like a little old man; with IUGR the blood is spared for the most important organs (brain, heart, adrenal glands)...so abdomen is not going to get bigger but head is! Kidneys aren’t getting enough blood so the kidneys aren’t making enough urine which leads to oligohydramnios.
- If mom is post-date: will be induced
  - Mom will have variables (decelerations) b/c she doesn’t have a lot of extra fluids so the vein is compressed.
  - May get amnioinfusion to get some of the pressure off the cord
- If mom is 28 weeks, she will be monitored via antepartum testing (fluid tested weekly or biweekly), NST, maybe biophysical profile.

The lecture based on the PPT started after she went through all this stuff...see following pages...
Analgesic Agents
- Administration - based on
  - woman’s request
  - established labor pattern
  - baseline assessment of mom & baby
  - progress of labor
- Types
  - Sedatives: barbituates (Seconal, Ambien); benzos (valium, versed) flumazenil is benzo reversal agent; H-1 Receptor antagonists (Phenergan, Vistaril, Benadryl); Narcotics (Stadol, Nubain, Demerol); Narcan is reversal for opioids
  - Narcotic (Stadol, Nubain, Demoral...IV administration preferred, may precipitate drug withdrawal)
  - H1-Receptor agonists: Phenergen, Vistaril, Benadryl

Nursing Management
- Determine Stage of Labor
- Evaluate contraction frequency, duration, & intensity,
- Established fetal well being
- Desired effect & side effects
- Safe form of transportation
- Red Flags – Multipara greater than 8 cm, Advanced dilation primipara

Regional Anesthesia
- Temporary and reversible loss of sensation
- Types
  - Lumbar epidural – Uterus, Cervix, Vagina, & Perineum
  - Pudendal – Perineum & lower Vagina- Given in Second Stage, just before birth
  - Local infiltration –Perineum Given just before birth
  - Spinal – Uterus, Cervix, Vagina, & Perineum
- Risk- less than general anesthesia – produced by injecting anesthetic into specific area-agent direct contact with nervous tissue

Lumbar Epidural
- Administration
  - Injection of local anesthetic agent into epidural space
- Continuous block
  - Block continuous – usually administered during active labor, 85% achieve complete relief, 15% partial, & 3% no relief
- Advantages & Disadvantages
  - Advantages: Adequate pain relief, Woman fully awake during labor and birth process, Allows for internal rotation, Adjusted to allow for laboring down
  - Disadvantages: Hypotension, Severe Complications -Postdural puncture, seizure, meningitis, cardio-respiratory arrest, vertigo
  - Problems- Major problem Hypotension, Inadequate block-One sided block, Pruritus, Break through pain, Maternal temperature
  - Headaches, migraine headaches, neckaches, & tingling of the hands and fingers (Cunningham et al., 2005), Systemic toxic reaction
  - Redflags- drop in maternal blood pressure, fetal deceleration, respiratory depression, post delivery headache-worse with ambulation
- Contraindications
  - Local or systemic infection
  - Coagulation disorder or low PLT count
  - Anticipated maternal hemorrhage
  - Abruption placenta, Placenta previa
  - Allergy to a specific class of local anesthetics
• Women with heart failure or aortic stenosis

**Spinal Block**
- Local anesthetic into spinal fluid (subarachnoid space)
  - Injected directly into the spinal fluid
  - Failure rate is low
  - Allows the drug to immediately mix with cerebrospinal fluid
  - Elminates window (whatever that means). Usually used for operative delivery (C/S)
- Advantages & Disadvantages
  - Advantages: immediate onset, smaller drug volume, relative ease of administration
  - Disadvantages: intense blockade of sympathetic fibers, greater potential for fetal hypoxia, uterine tone is maintained, short acting so difficult to maintain
- Complications
  - Hypotension (prehydrate 500-2000 ml)
  - Ephedrine drug reaction- total spinal neurological sequelae (not sure what this means)
  - Anesthesia occurs at C3-C5 level
  - Respiratory function impaired
  - Spinal headache in 1-3%
  - Lasts up to 7 days
  - Blood patch performed, helps spinal headache

**Pudendal Block**
- Perineal anesthesia for second stage labor, birth & episiotomy repair; injected below pudendal plexus
- Advantages & Disadvantages
  - Adv: ease of administration, absence of hypoT, allows use of vacuum or low forceps delivery
  - Dis: urge to bear down may be decreased; burning sensation when block administered

**Local Infiltration**
- Intracutaneous, subcutaneous, & intramuscular
  - Injected into the perineum
- Advantages & Disadvantages
  - Adv: least amount of anesthetic agent used; done just prior to birth
  - Dis: large amounts of solution used; burning sensation at time of injection

**General Anesthesia**
- Methods Used
  - IV Injection
    - Pentothal –short acting Narcosis 30 seconds after IV administration
    - Ketamine – intermediate acting, contraindicated with preeclampsia or chronic hypertension
  - Inhalation of anesthetic agent
    - Nitrous oxide -Fetal uptake in 20 minutes; Isofluorane, halothane, sevoflurane, desflurane, enflurane – (may be in combination with Nitrous), May be used in combination with spinal or epidural anesthesia
  - Combination of both of the above
- Administration considerations
  - Preterm: susceptible to depressant drugs; poorly developed BBB; medication will attain higher concentration in CNS; decreased ability to metabolize and excrete drug after birth; use smallest dose possible
  - Preeclampsia: regional anesthesia preferred
  - Diabetes: reduction in placental blood flow, hypoT likely, CV depression during block, higher sympathetic blockade
  - Cardiac disease
    - Mild Stenosis: preferred method is continuous epidural and low forceps delivery, no valsava maneuvers;
    - Hypotension, controlled IV fluids, epidural or general anesthesia for C/S; avoid ketamine b/c it causes tachycardia
• Bleeding:
  • If there is no active bleeding, FHR is good, and mom’s CV status is stable, then epidural is OK
  • if there is active bleeding, then treat hypovolemia; regional block is contraindicated in active bleeding,
    general anesthesia-Pentothal (a cardiac depressant and vasodilator) and Ketamine are recommended.

• Complications
  • General anesthesia has risk of aggravating maternal HTN
  • Intubation may be difficult, may cause mucosal edema in oral cavity and glottis
  • Fetal depression...anesthetic agent reaches fetus in about 2 minutes
  • Uterine relaxation, uterine atony
  • Decreased gastric motility (undigested food makes for production of more gastric juices which can be
    aspirated (Mendelson’s syndrome/chemical pneumonitis). This is a leading cause of maternal death and it is
    due to the failure to establish a patent airway
  • Red flags for intubation is obesity!

Dysfunctional Labor Patterns (slide 12)
• Abnormal labor pattern
• MOST COMMON INDICATION FOR C/S
• It is termed ‘dystocia’...an abnormal labor pattern resulting in prolonged labor
• The abnormality occurs with one of these three Ps (or maybe all): Power (contractions), Passenger (fetus) or
  Passageway (soft tissue or pelvis)

• Hypertonic Labor Patterns
  • Ineffective uterine contractions in the latent phase, resting tone is increased
  • Contractions are painful but ineffective. There is no cervical dilation or effacement
  • Contractions more frequent
  • Clinical Therapy = bedrest, sedation, oxytocin or amniotomy, rule out CPD or malpresentation.

• Hyptonic Labor Patterns
  • Cause -Unknown
    • Genetic factors which control normal physiologic process of labor
    • C-section and operative deliveries run in families
    • Advanced maternal age
  • Definition = uterine contractions irregular, low amplitude, less than 1 cm dilation per hour (protracted labor) OR
    no change of cervical dilation for 2 hours (arrest of progress)
  • Clinical Management
    • Oxytocin or AROM
  • Nursing Care
    • Assess VS, contractions, FHR
    • Vag exam to determine dilation, descent, check for caput (it increases as hypotonic labor goes on)
    • Assess mom for stress and anxiety
  • Red flags
    • PROM
    • Maternal temp
    • Increased incidence of chorioamnionitis

Precipitous Labor and Birth
• Rapid birth process: occurs within 3 hours
• Cause: low resistance in maternal soft tissues, rapid dilation, rapid descent, strong contractions
• Maternal Risks: Abruptio placenta, extensive laceration of cervix, vag and perineum
• Fetal Risks: Meconium, low apgar, brachial palsy, intracranial trauma

Postterm Pregnancy
• Definition = pregnancy that extends more than 294 days or 42 full weeks (from last menstrual period)
• Incidence = 7% of all pregnancies
• Cause = unknown; possibly error in dating; associated with previous postterm pregnancy, primiparity, placenta sulfatase deficiency, fetal anencephaly, male fetus, genetic predisposition
• Maternal Risks = labor induction, macrosomic or LGA baby, increased use of vacuum or forceps, maternal hemorrhage, increased risk of C/S; mom has anxiety, fatigue, irritability
• Fetal Risk = Decreased uterine-placental circulation; decreased blood supply, oxygen and nutrition; mortality rate goes up; potential for dysmaturity syndrome is 20%; increased risk of oligohydramnios and umbilical cord compression
• Clinical Management = Nonstress test biweekly; amniotic fluid index weekly; possible biophysical profile

Fetal Malposition
• Persistent Posterior Occiput
  • Most common fetal malposition
  • 15% in early labor...as labor progresses, it may cease or the fetus is born in the OP position 5% of the time
• Maternal symptoms: intense back pain in the small of the back throughout labor
• Maternal/Fetal Risks
  • third or fourth degree laceration
  • higher incidence of operative delivery
  • if failure to rotate, then fetal mortality
• Clinical Management
  • close monitoring of fetus
  • safest method of delivery is spontaneous birth with manual rotation
  • forceps assisted delivery with rotation is “Scanzoni maneuver”

Fetal Malpresentations
• Brow (the least common)
  • Cause: high parity, placenta previa, uterine anomaly, hydramnios, fetal anomaly, low birthweight, large fetus
  • Mechanics: forehead of fetus is the presenting part; the head is slightly extended and the fetal head enters the birth canal with its widest diameter...OUCH!
  • Maternal Risk: prolonged labor or arrested labor; C/S
  • Fetal Risk: birth injury, cerebral and neck compression, damage to trachea and larynx.
• Face
  • Occurrence: multiparous women, women with a pendulous abdomen (Yellow Dot!)
  • Contributing factors: contracted pelvis 10-40% (I have no idea what the percentages mean); anencephaly 30%, fetal malformations 60%
  • Mechanics: face of fetus is presenting part and head is hyperextended
  • Success rate for vaginal delivery
    • 60-70%
    • no attempt to manually rotate
    • mentum posterior can become wedged on anterior surface of sacrum
    • can place FSE on mentum (fetal scalp electrode can go on the chin)
• Breech
  • Incidence: 4% overall; for gestational age of 25-26 weeks it’s 25%; for gestational age of 32 weeks it’s 7%
  • Associated with…
    • Placenta previa
    • implantation of placenta in cornual area
    • hydramnios
    • high parity
    • oligohydramnios
    • hydrocephaly
    • anencephaly
    • previous breech presentation
    • uterine anomalies
    • pelvic tumors
    • multiple gestations
• fetal anomalies

• Types of Breech Presentation
  • Frank Breech (50-70%) most common; flexed and extended hips
  • Footling Breech (10-30%) one or both hips extended, foot is presenting part, occurs more frequently with preterm labor
  • Complete Breech (5-10%) sacrum is presenting part
• Complications: cord prolapse, head entrapment (oh boy!)
• Medical Management:
  • External version: attempted at 37-38 weeks
  • Planned C/S
  • Alternative therapies = mugwort (Chinese)

• Shoulder
  • Definition: Infant's long axis lies across abdomen
  • Associated with…
    • grandmultiparity
    • lax uterine muscles
    • obstructions of bony pelvis
    • placenta previa
    • neoplasms
    • fetal anomalies
    • hydramnios
    • preterm fetus
  • Incidence: 1 in 300; not uncommon in multiple gestations
  • Clinical Management: external version if baby is 28 weeks or greater
  • Complications: cord prolapse, uterine rupture

Fetal Macrosomia
• Definition: fetal weight greater than 4500 grams
• Incidence: women who are obese are more likely to have macrosomic baby
• Complication: shoulder dystocia, adequate pelvis for normal birth but not for big baby, possible brachial plexus injury
• Clinical Management:
  • McRobert’s maneuver (lie on back with knees at chest)
  • Ultrasound for fetal weight, early induction

Multiple Gestations
• Incidence
  • Twins account for 3.2% of all pregnancies
  • Triplets account for 1.8% of all pregnancies
• Terminology
  • Dizygotic -Two separate ova (Fraternal twins) 67%, Monozygotic Single ovum (Identical twin) 33%
  • Dichorionic-diamniotic twin (Single ovum) – division occurs within 72 hours after fertilization 30% of monozygotic twins
  • Monochoronic-diamniotic – division occurs at blastocyst stage 4 to 8 days after fertilization 68% of monozygotic twins
  • Monochorionic-monoamniotic – division occurs in primitive germ disk 9 to 13 days past fertilization 2% of monozygotic twins
• Maternal Complications
  • spontaneous abortion, gestational diabetes, HTN, pulmonary edema, maternal anemia, hydramnios, PROM, incompetent cervix, IUGR, preterm birth
  • uterine dysfunction, uterine atony or hemorrhage
• Clinical Management
  • Decision is made based on presence of complications and presentation of fetus
- If no complications and both are vertex, then vag birth
- Placenta is examined after and sent to pathology to determine if mono or dizygotic twins

**Placenta Problems**
- Types
  - Developmental: placenta lesions, succenturiate placenta, circumvaliate placenta, battledore placenta
  - Degenerative: infarct and placental calcifications
- Placental Problems (Developmental)
  - Succenturiate Placenta
    - One or more accessory lobes is attached to the main placenta by fetal vessels
    - Complications: PP hemorrhage; no complications for baby
  - Circumvallate Placenta
    - Fetal surface of placenta exposed through an opening around the umbilical cord; vessel descends from cord and ends at margin (I have absolutely NO IDEA what this means)
    - Maternal Complications are linked to threatened abortion: PTL, painless bleeding after 20 weeks, placental insufficiency, intrapartum hemorrhage
    - Fetal Complications: IUGR, prematurity, death
- Developmental Problems of the Placenta
  - Definition: insertion of the cord within 1.5 cm of the margin
  - Incidence: 5-7% of all pregnancies
  - Maternal Complications: PTL, bleeding in labor, vessel rupture
  - Fetal Complications: prematurity and fetal distress
- Degenerative Changes of Placenta
  - Definition: excessive calcifications or infarcts
  - Affects uterine/placental fetal exchange
  - Causes: HTN (PIH or chronic), smoking
  - Grade 0: lasts 1st trimester through early 2nd trimester only; uniform moderate ethnogenicity; smooth chorionic plate without indentations
  - Grade 1: mid 2nd trimester through early 3rd trimester (18-29 weeks), subtle indentations of chorionic plate, small and diffuse calcifications (hyperechoic) that are randomly dispersed in the placenta
  - Grade 2: late 3rd trimester (around 30 weeks through delivery); larger indentations along the chorionic plate; larger calcifications in a dot-dash configuration along the basilar plate
  - Grade 3: 39 weeks to post dates; complete indentations of chorionic plate through to the basilar plate creating “cotyledons”...these are portions of the placenta separated by the indentations; there are more irregular calcifications with significant shadowing; may signify placental dysmaturity which can cause IUGR; associated with smoking, chronic HTN, SLE and diabetes

**Umbilical Cord Abnormalities**
- Types
  - Umbilical vein: true knot, hypercoiled cord, short cord, long cord
  - Insertion variations: velamentous insertion, vasa previa
- Velamentous Insertion
  - Incidence: 1-2% of all placentas
  - Definition: cord insertion into membranes; vessels run between amnion and chorion
  - Maternal complication: hemorrhage if one of the vessels is torn
  - Fetal complications: fetal stress, hemorrhage

**Amniotic Fluid Embolism**
- Definition: bolus of amniotic fluid enters maternal circulation and lungs causing a massive immune response to occur
- Cause: unknown
- Mortality rate: 61-86% of women die; 50-61% of fetuses die; it is the SECOND LEADING CAUSE of maternal death
- Signs of symptoms: respiratory distress, restlessness, dyspnea, cyanosis, pulmonary edema, respiratory arrest
- Signs of circulatory collapse: tachyC, hypoT, shock, cardiac arrest
• Nursing response: optimize perfusion and oxygenation, maximize cardiac output and BP, deliver a live fetus!

Hydraminos
• Definition: greater than 2000 ml of fluid (aka “polyhydramnios”)
• Cause: unknown; occurs in major congenital anomalies, gestational diabetes, anencephaly, twins
• Types
  • Chronic: fluid builds gradually
  • Acute: fluid builds suddenly between 20-24 weeks
• Clinical Management: needle amniotomy to decrease symptoms of maternal dyspnea and pain
• Red flag: watch for prolapsed cord in labor!

Oligohydramnios
• Definition: less than 500 ml amniotic fluid
• Cause: unknown, found in postmaturity and IUGR
• Clinical Management: biophysical profile, NST, serial ultrasounds
• Considerations in labor: amnioinfusion

Cephalopelvic Disproportion (CPD)
• Definition: a contracture in any of the following:
  • maternal bony pelvis (beginning at inlet where the ischial tuberos has a diameter of < 8cm, and ending at outlet)
  • maternal soft tissues
• Medical Management:
  • trial of labor...mom labors down and the forces of labor push the biparietal diameter of the fetal head beyond the interspinous obstruction
  • If mom has an infection, then labor is prolonged….or she meant that prolonged labor leads to infection.
• Treatment: C/S for no progress
• Red Flags
  • unengaged head in early labor with primigravidas
  • hypotonic uterine contractions
  • deflexion of fetal head
  • uncontrolled pushing before compete dilation
  • failure to descend
  • edema of anterior portion of cervix

Birth Related Procedures
• Version
  • Definition – turning the fetus to change the presentation by abdominal or intrauterine manipulation, in which the fetus is changed from a breech, transverse, or oblique lie to a cephalic presentation by external manipulation
  • Success rate – 60%
  • Types
    • external cephalic version – may be attempted after 36 to 37 weeks applying pressure to the fetal head and buttocks so that the fetus completes a backward flip or forward roll
    • Podalic version – used in second twin deliveries during a vaginal birth; obstetrician places hands inside of uterus, grabs the fetus feet and then turns the fetus from transverse or non cephalic presentation to a breech presentation
  • Criteria – single fetus, fetal breech not engaged, adequate amniotic fluid, reactive nonstress test, fetus must be at 36 to 37 weeks,
  • Contraindications
    • suspected IUGR, fetal anomalies, presence of abnormal FHR, rupture membranes, cesarean birth indicated anyway, maternal problems –gestational diabetes (requiring insulin), uncontrolled hypertension, preeclampsia, maternal cardiac disease
• Amniotic fluid abnormalities – oligo or poly, previous lower uterine segment c-section, nuchal cord, multiple gestation, third trimester bleeding, uterine malformation

Induction of Labor

• Types
  • Stripping Membranes – sweeping motion separate amniotic membranes from lower uterine segment and internal os – thought to release prostaglandins
  • Oxytocin Infusion – High dose vs low dose
  • Cervical Ripening Agents – cytotec, cervidil, prepdi
  • Mechanical – Balloon catheter, laminaria
  • Complementary – intercourse, nipple stimulation, Herbs, castor oil, accupressure

• Indication for Induction -Diabetes Mellitus, renal disease, preeclampsia, hypertensive disorders, PROM, Chorioamnionitis, fetal demise, postterm gestation, IUGR, Isoimmunization, history of rapid delivery, mild abruption placenta, nonreassuring antepartal testing, severe oligohydramnios

• Contraindications -Abnormal fetal heart rate pattern, breech presentation, unknown fetal presentation, multiple gestation, polyhydramnios, presenting part above maternal pelvic inlet, severe hypertension, maternal heart disease, complete placenta previa, vasa previa, abruptio placentae, prolapsed cord, previous myomectomy, vaginal bleeding unknown cause, transverse lie, more than 1 previous c-section, cpd, active genital herpes

• Prelabor Status Evaluation- Bishop score
  • 5 criteria; cervical dilation, cervical effacement, fetal station, cervical consistency, cervical position

Amniotomy

• Definition: artificial rupture of membranes (AROM); uses a hook inserted through the cervix to break the bag of water

• Advantages:
  • contractions elicited are similar to spontaneous labor
  • usually there is no risk of hypertonus or ruptured uterus
  • does not require intensive monitoring
  • EFM facilitated due to ability to place the fetal scalp electrode
  • color and composition of amniotic fluid can be evaluated

• Disadvantages
  • Increased incidence of infection, cord prolapse compression and molding of fetal head
  • variable decels
  • fetal injury
  • bleeding if undiagnosed vasa previa is present

• Red flags: amniotomy with undescended fetal head can lead to cord prolapse

Amnioinfusion

• Introduction of warmed normal saline into amniotic cavity through an IUPC

• Indications
  • oligohydramnios
  • fetal cord compression
  • severe variable decels or prolonged decels
  • meconium stained fluid

• Contraindications
  • Amnionitis
  • hydramnios
  • uterine hypertonus
  • multiple gestation
  • known fetal anomaly
  • uterine anomaly
  • nonreassuring fetal status requiring birth
  • nonvertex presentation
• Procedure: inflation of fluid bolus from 250-500 ml over 20-30 mins followed by a continuous infusion; monitor I&O
• Red flags: increasing uterine size without output or bleeding

Episiotomy
• Definition- surgical incision of the perineal body
• Types
  • Midline – performed along the median raphe of the perineum – extends down from the vaginal orifice to the fibers of the rectal sphincter
  • Disadvantage- tear will extend through anal sphincter and rectum
  • Mediolateral – begins in the midline of the posterior crouchette and extends at a 45-degree angle downward to the right or left
  • Disadvantage- greater blood loss, longer healing period, postparta discomfort, repair more difficult
• Predisposition – large or macrosomic fetus, occiput-posterior, use of forceps or vacuum extractor, shoulder dystocia, and white race- other factors use of lithotomy position (excessive perineal stretching, encouraging or requiring sustained breath holding during second-stage pushing, time limits
• Considerations -No maternal advantage, does not protect perineum, perineal lacerations heal quicker, greater likely hood of extension
• Questions as to whether should be performed in LGA births
• Complications -Blood loss, infection, perineal discomfort, dyspareunia, flatal incontinence

Forcep-Assisted Delivery
• Definition: instrument delivery with two curved spoon-like blades; these assist in delivery of the fetal head using traction applied with contractions
• Indications:
  • Fetal distress during labor
  • Abnormal presentation
  • Breech delivery – instrument delivery of head
  • Arrest of rotation
  • Any condition that threatens the mother or fetus that can be relieved by birth
• Prerequisites -Empty bladder, fully dilated, fetal head engaged, adequate anesthesia

Vacuum Extraction
• INVOLVES THE USE OF A CUPLIKE SUCTION DEVICE THAT IS ATTACHED TO THE FETAL HEAD. TRACTION IS APPLIED DURING CONTRACTIONS TO ASSIST IN THE DESCENT AND BIRTH OF THE HEAD, AFTER WHICH, THE VACUUM CUP IS RELEASED AND REMOVED PRECEDING DELIVERY OF THE FETAL BODY.
• Accounts for 68% of all operative births
• Pump creates negative pressure -50 to 60 mmHg depends on hospital protocol
• Indications
  • Maternal exhaustion
  • fetal distress during second stage labor
  • prolonged second state or nonreassuring heart rate pattern
• Conditions
  • Presenting part must be vertex at 0 station
  • only performed by experienced practitioner
  • terminated if device pops off after three attempts and delivery does not occur
• Risks: Cephalohematoma, scalp lacerations, subdural hematoma, maternal lacerations to cervix, vagina, or perineum

Cesarean Birth
• Indications: Complete placenta previa, CPD, placental abruption, active genital herpes, umbilical cord prolapse, failure to progress, nonreassuring fetal status, breech, anomalies, previous C/S, maternal preference.
• Incisions:
  • Skin=Transverse – suboptimal visualization, does not allow for extension, Vertical - quicker
• Uterine = Depends on need for cesarean, Lower uterine segment, Upper segment of uterine corpus
  • Preoperatively
    • Consents, shave, indwelling catheter, prepare site, provide emotional support
  • Intraoperatively
    • Assist in positioning of patient, fetal heart rate, instrument counts
  • Postoperatively
    • Monitoring vital signs, provide pain relief, dressing and perineal pad checks, assist mother and baby with bonding

**Vaginal Birth After Cesarean (VBAC)**

- **Success rate:**
  - highest for C/S performed for breech (91%)
  - nonreassuring FHR pattern (84% success rate)
  - previous dystocia before 5 cm (67%)
  - previous dystocia 6-9 cm (73%)
  - second stage dystocia (75%)
- **Guidelines by ACOG:** one previous C/S birth with low transverse incision, adequate pelvis, no other uterine scar or previous rupture
- **Complications:**
  - uterine rupture and dehiscence
    - 0.1% to 0.7% risk of rupture
  - hysterectomy
  - uterine infection
  - maternal and neonatal death
    - higher rates of stillbirth and hypoxia infants
    - transfusion (for who?)

**High Risk PP**

- Most of the problems with PP hemorrhage has to do with the myometrial contraction ring or problems with contracting.
- We can give meds that affect the contraction of the uterus, or the process of involution.
- PP hemorrhage is one of the leading causes of morbidity and mortality in the US...one of the biggest reasons for blood transfusions in the US.
- Mom can tolerate down to Hgb 7 and Hct 21 and still have no problems with dizziness, BP issues, tachycardia.
- A hemorrhage due to uterine atony is ~500 ml per minute (that's how much blood volume flows through uterus)

**What are some things that can cause the uterus to not contract?**

- Retained placental fragments
- Full bladder
- Multiparity
- Pitocin-induced labor...if she gets a lot, she's not going to react to the Pitocin they give post-delivery b/c the receptor sites are already saturated.
- Uterine atony
- Uterine inversion
- Coagulation disorders
- Manual removal of the placenta
- Mag sulfate administration
- Uterine subinvolution (usually r/t infection or retained fragments)

**Signs of Postpartum Hemorrhage**

What are the signs of postpartum hemorrhage?
• Bleeding
• Boggy to semi-boggy uterus
• Clots
• Subinvolution of the uterus (rising uterus)
• Excessive pain in perineal area could be hematoma; meds don’t take care of the pain...it’s really bad!
  • A hematoma over 500 ml would be drained

Vital signs?
• BP and TachyC are late signs; have to lose more than 1000 mL of blood before you see these signs

**Post Partum Hemorrhage (PPH) Defining Criteria**
• Traditional definition
  • > 500 ml vag; > 1000 ml C/S;
• Objectively: 10% decrease in Hct
• ACOG definition: anything above 1000 ml no matter what type
• Early or Late
  • Early is < 24 hours post delivery of placenta
  • Late is > 24 hours post delivery of placenta

**Early (Primary) Postpartum Hemorrhage**
• < 24 hours
• Causes?
  • Uterine Atony (#1 cause!); uterus doesn’t contract down for whatever reason; the blood starts pooling in the vagina; physician manually goes in and massages uterus; this pt needs pain meds!
  • Physician tugging too much on umbilical cord (can cause uterine inversion)
  • Lacerations and hematomas
• Treatment
  • Correct the cause; first line is the massage and then drugs
• Medications
  • Oxytocin 10-40 mg (IM or IV) is the main one
  • Prostaglandin
  • Hemabate
  • Merthegen is not used (or used cautiously) if pt has HTN
  • Misoprostol has to be used cautiously for a pt with HTN
• Nursing Implications
  • Check fundus q 10-15 minutes post hemorrhage
  • Fundal checks after meds
  • Once stable, then q 30-60
  • Weigh pads to quantify blood loss
  • Monitor blood pressure and pulse q 15 mins

**Cervical, Vaginal or Perineal Laceration (another type of EARLY postpartum hemorrhage)**
• Can be slow trickle or fast...depends on size of laceration
• 2nd most common cause of PP hemorrhage
• Uterus will feel tight and firm, but she continues to bleed
• Factors that influence whether they have a PP hemorrhage
  • Large baby
  • Precipitous delivery
  • Face up presentation; malpresentation
  • Assisted delivery (forceps, vacuum)
  • Varicosities (like a vulvar varicosity)
  • Previous scarring/scar tissue
• Treatment
  • Monitor bleeding
Keep IV in place for at least 4 hours
May need to give blood products if severe

**Retained Placenta (Non adherent) EARLY PP hemorrhage**
- **Cause**
  - partial separation of placenta
  - pieces left behind
- **Treatment**
  - manual removal of contents
  - need to keep an eye on mom’s temp b/c this procedure puts her at risk for an infection
  - may need to go in surgically to remove placenta

**Vulvar, Vaginal and Pelvic Hematomas (Early PP Hemorrhage)**
- **Cause**
  - Injury to the blood vessel
  - Can be r/t varicostiltes, or can just be trauma to that vessel...baby pressing on a vessel causing damage
- **Risk factors**
  - Precipitous labor
  - First full-term birth
  - Prolonged 2nd stage (baby sitting on perineum for a long period of time)
  - Macrosomic baby
  - Assisted deliveries
- **Signs & Symptoms**
  - The skin starts “blowing up” and bulging out
  - Pain that is not controlled with meds; severe rectal pain if anterior
  - Inability to void
- **Prevention**
  - Ice packs can help decrease it
- **Treatment**
  - Drain it via surgical ligation

**Uterine Inversion**
- The Johnson Method...grab uterus and force it back in with fist; have to do this very quickly b/c uterus can start contracting and stuck outside the body.
- If uterus seems like it’s starting to contract will give terbutaline to relax it, then put it back in, then give pit or something to make it contract once it’s in place.
- Likely to have again if you’ve had it once
- Doc pulling on cord can cause it if the placenta is not detaching properly
- 1st-degree through 3rd degree
- Ferguson says the first intervention is to call the doc...though NCLEX might say it’s to cover the uterus with a sterile-saline soaked cloth
- There’s also a hydrostatic method that uses water pressure to push uterus back into place.

**Uterine Rupture**
- Women with a previous C/S can have a uterine rupture, but it’s not very common; VPAC is actually recommended
- Uterus doesn’t have good resting tone...can cause tear in C/S scar area; if the tear is at the scar the woman will not have much pain and uterus will still contract but no longer dilate; if it tears through myometrium then there is significant pain, baby gets detached and can even be floating in abdomen...obviously this is a C/S case
- Oxytocin can cause it
- Statistics = 0.2 to 1/5% of previous C/S pt

**Adherent Placenta**
- Placentas are attached to uterus; categorized by acreta, percreta, increta (look these up)
- Placenta acreta: goes slightly into myometrium; may be able to treat with methotrexate (kills rapidly dividing cells)
- Placenta increta (trophoblastic cells attach to myometrium), so more invasion of the uterine musculature; needs C/S and hysterectomy
- Placenta percreta invades myometrium and neighboring tissues...most invasion with this one; can dx at 18 weeks; needs C/S and hysterectomy
- Can give methotrexate to dissolve a portion of the placenta if just one little "cotyledon" is affected...but if it's more that, the meds aren't going to be enough

**Late or Secondary PPH**
- > 24 hours but < 6 weeks
- Causes
  - Subinvolution of the uterus (uterus doesn’t contract down and stay down)
  - Could be r/t infection or retained placental fragments
- Signs and Symptoms
  - Prolonged lochia serosa or rubra
  - Irregular or excessive bleeding
- Treatment
  - IV abx if infection; culture to determine causative organism prior to abx
  - If retained placental fragments then they’ll take care of that

**Nursing Management**
- Review the pt's history to determine if she has r/f for PP hemorrhage; have meds on hand
- Assess pt for S&S of hemorrhage
  - more than 1 pad an hour for > 2 hours
  - passing golf-ball sized clots
  - check bladder for retention
  - skin color is also a late sign
- Frequent vital signs: keep in mind that these are late signs
  - in first hour PP, mom is monitored q 15 mins.
- Laboratory studies

**Nursing Education...nurses need to know what to look for!**
- Normal involution
- Excessive vaginal clots or resumption of bleeding
  - if mom has excessive bleeding, have mom rest and see if that slows things down
- Fever (> 100.4 = fever)

**Postpartum Hemorrhage**
- Case Study #1
  - First intervention: massage fundus
  - Bladder is full: empty it
  - Still bleeding and firm: suspect laceration, call doc
  - This is an early hemorrhage

**Postpartum Infections**
- Definition
  - Major cause of morbidity & mortality throughout world, 6% in US
  - Infection rate 1-8%
  - 38-degrees or more on 2 successive days within first 10 days PP; AWOHN says two or more elevations above 38-degrees, six hours apart
- Contributing factors
  - prolonged ROM
  - multiple exams
  - C/S, especially emergency ones
• compromised health status

Types of Infections
• Endometritis
  • Incidence: 1-3% vag; 20% C/S
  • Causative organisms: usually group B strep
  • Sign & Symptoms: usually onset 24-36 hours post delivery
    • fever that can spike up to 40
    • foul-smelling discharge
    • uterine tenderness
    • excessive bleeding
• Urinary Tract Infections
  • Causative agent: usually e. Coli for lower-tract infection
  • Signs & Symptoms
    • urinary frequency, suprapubic pain, difficulty urinating, fever, chills, flank pain maybe, hematuria
  • Treatment
    • for lower tract: abx therapy, drink fluids
    • for pyelonephritis: IV abx, antipyretics, analgesics
    • teach mom about hygiene
    • do a good job cleaning prior to catheterization
• Cesarean Wound Infections (infection rate 3-5% higher in emergency C/S)
  • Predisposing factors
    • obesity, diabetes, prolonged labor, anemia, steroid therapy, immune suppressant agents
  • Signs & Symptoms
    • gaping, oozing wound
    • redness around wound site
  • Treatment: broad-spectrum abx, wound packing, analgesia
• Mastitis
  • Incidence 3% to 5% of breastfeeding women
    • caused b/c baby is not latching on well, tissue gets excoriated and baby brings bacteria from their mouth into the broken skin
    • usually caused by staph, can also be e.coli, candidiasis
  • Signs & Symptoms
    • redness and pain in breast area
    • may have a red streak
    • feel flu-like
  • Treatment
    • abx
    • fluids
    • rest
    • warm, moist compresses to decrease swelling
    • continued breastfeeding
  • Prevention
    • appropriate latch technique
    • handwashing

Thromboembolic Disease
• Pregnant women have hypercoagulability during pregnancy as a protective mechanism
• Incidence
• Risk factors
  • woman on BR over 1 week
  • older moms
  • previous history of thromboembolic disease
  • obesity
- CHF patients
- surgery, especially pelvic area!
- Major cause: trauma to the vein, causing the vein problem with the epithelium. Venous status, hypercoagulability, and endothelial damage (Virchow's triad?)
- Four types
  - Superficial
  - Deep vein
  - others?
- Superficial Leg Vein
  - Most common postpartally
  - Site – Saphenous veins
  - Symptoms: redness and tenderness
  - Treatment: heat, inflammatory agents, rest the affected leg
- Deep Vein Thrombosis
  - History of thrombosis is a big risk factor
  - Associated with OB complications, polyhydramnios, preeclampsia, operative birth
  - Symptoms: warmth, tenderness, change in leg circumference and maybe also color, decreased peripheral pulses, Homan’s (maybe), low-grade fever followed by a high fever
  - popliteal vein: pain in popliteal area
  - inguinal tenderness is femoral vein
  - pain in lower abdomen is ilio-femoral vein
  - Treatment: bedrest, anticoags, watch for PE (chest pain, coughing, dyspnea, tachypnea, hemoptysis)
- Nursing Interventions
- Septic Pelvic Thrombophlebitis
  - Development, occurs after surgery?
  - Diagnosis: US
  - Signs and Symptoms
    - abdominal pain, 2nd or 3rd day PP fever, tachycardia
  - Treatment = anticoags, abx

Coagulation Disorders
- Antithrombin deficiency
  - protein C or protein S deficiency
  - should be in category of thromboembolic disease b/c these women clot; mom may have multiple miscarriages or fetal demise d/t clots
  - pretty rare (protein c is 1:300; protein S is 1:20,000)
  - both have potential for DVTs
- Von Willebrands disease
  - Type of hemophilia (there are three classes...3 is more severe than class 1 or 2)
- Idiopathic Thrombocytopenia
  - Gestational Thrombocytopenia: usually occurs around 3rd trimester...the PLT drop to 80,000. Not really treated, but there is potential that she won’t be able to get an epidural. She’ll need PLTs run prior to epidural to see if she can get one (should be around 100,000 in order to get an epidural, but Dr. F has seen one put in at 80,000, but this is pretty questionable.
  - Autoimmune Thrombocytopenia: auto-antibodies destroy platelets, this crosses the placenta and causes problems in the baby
    - Tx = prednisone, response usually occurs in 3-7 days.

Coagulopathies
- Disseminated Intravascular Coagulation
  - Definition: A serious medical condition that develops when the normal balance between bleeding and clotting is disturbed. Excessive bleeding and clotting injures body organs, and causes anemia or death.
  - Causes
    - Usually related to amniotic fluid embolus, dead fetal syndrome, severe preeclampsia, septicemia
• Diagnosis: multitude of labs (bleeding time, etc...), the D-Dimer tells you the severity of the disease (the higher it is, the more severe)

• Primary Management
  • Fix the underlying cause
  • Volume replacement
  • Blood component therapy
  • Oxygen

**Postpartum Blues**
• Incidence: 50-70% according to the book; Kaiser says 70-80%
• Mom is sleep-deprived + drastic change in hormones = moody, tearful, etc...
• Occurrence: occurs 2-3 days PP and lasts up to 2 weeks
• Contributing factors
  • Let-down of having a baby?
  • Hormone changes
  • Fatigue
• Treatment
  • Encourage rest, good nutrition, self-care

**Postpartum Depression**
• Incidence: much more common than it used to be; around 30% of moms
• Affects mom in first 6 weeks to first year
• Symptoms
  • Anxiety, depression, don’t want to care for self or baby, difficulty concentration or making decisions, diminished appetite, harmful thoughts about self and/or baby
• Risk factors
  • First baby, unrealistic expectations, lack of support, bi-polar hx, PP depression hx, complications of delivery b/c mom feels guilty or has a prolonged recovery or doesn’t have the birth she planned, poverty or lower socioeconomic level
• Treatment for PP depression
  • Therapy and maybe meds
  • Evaluate mom’s risk for PP depression so you can intervene early

**Postpartum Psychosis**
• Edinburgh Postnatal Depression Scale
  • Hyperactive, insomnia, irrational thoughts, think baby is going to harm them, difficulty concentrating, poor judgment, lose touch with reality
  • Can be r/t lack of support, obsessive personality, low socioeconomic status
  • Can be related to previous psychoses
  • Treated with hospitalization, anti-psychotic meds, remove baby from mom

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**WOMEN’S HEALTH**

Dr. Brenda Hanson-Smith, RN,
DNS, WHNP-C
Spring 2010

**Objectives**

- Describe high risk behaviors associated with STI infections
Describe prevention of STIs in women

Compare and contrast signs, symptoms and management of selected vaginal infections in women

Discuss the effects of group B strep on pregnancy and the management of pregnant clients with group B strep

Women’s Health Objectives

Discuss pathophysiology of selected benign breast conditions

Differentiate between benign conditions and malignant neoplasms of the breast

Differentiate between benign neoplasms of the ovaries and uterus

Discuss treatment methods utilized in management of the benign neoplasms

Describe health promoting behavior that reduces cancer risk

Identify common symptoms associated with menopause

Describe the treatment and management of menopause

STDs (STIs) Transmission

Blood and body fluids

Mucous membranes

IV drug use

Risk factors for transmission

- Lack of preventative health knowledge
- Sexual behaviors

High Risk behaviors

- Multiple sexual partners, or a new partner with unknown history of STDs
- Personal history of any STD
- Drugs or alcohol use in a situation where sex might occur
- Having a partner who is an IV drug user
- Anal intercourse
- Unprotected intercourse (sex without the use of a male or female condom) with an unknown partner

Prevention

Primary prevention

- Most effective way of ↓ adverse consequences of STI for women and society

Secondary Prevention

- Prevents spread of disease to others

Primary Prevention message

- Abstinence
- Monogamous relationship with infection-free partner
- Safer sex practices: Use barriers to avoid contact with semen, vaginal fluids, or blood. (Condoms)
- Spermicides ineffective
Avoid sex with open lesions, reduce # of partners, know their history

STI testing

Secondary Prevention

- Facilitate treatment
- Treatment of partner
- Reportable to Public Health
- Avoid sex while having open lesions, ulcerations (either partner)

Nurse involvement

- Assess risk
  - Sexual history, risky behaviors, drug related behaviors
- Ask open ended questions
  - Non-judgmental
  - Use understandable language
  - Reassurance
- Explain accurate information about transmission, symptoms, and high risk behaviors
- Facilitate treatment and follow-up

Report to public health

Most common STIs

- Chlamydia
- HPV
- Gonorrhea
- Herpes simplex 2
- Syphilis
- HIV

Most common bacterial STI in U.S.?

- May cause thin, mucopurulent discharge
- Dysuria
- On pelvic exam: “friable cervix” or cervical ectopia

Chlamydia: the silent disease
– 3/4 of infected women and about ½ of infected men have no symptoms.
– +Most common STI; 3 million new cases yearly in US
– Incubation 7 + days
– Symptoms in males
  • None, or Burning with urination
  • If symptoms do occur, they usually appear within 1 to 3 weeks after exposure

**Female Chlamydial infections**

**Signs and symptoms**

• Increased vaginal discharge
• Painful urination
• Bleeding after sex, irregular bleeding
• Lower abdominal pain
• PID, ectopic pregnancies
• Infertility

In pregnancy may cause PTL, PTD, neonatal pneumonia, neonatal eye infections

**Treatment**

- Doxycycline 100mg BID X 7 Days
- Azythromycin 1G orally (single dose)
- If pregnant
  - Erythromycin 500mg QID X 7 days
  - Amoxicillin 500mg TID X 7

**Partner must be treated at the same time**

**Gonorrhea**

- 600,000 new cases yearly-highly communicable
- > 20 highest rate, adolescent girls
- Drug resistant bacteria increasing
- Incubation 2-3 days
- Symptoms in males
  - None
  - Thick milky discharge, painful urination

**Female Gonorrhea infections**

- No symptoms
- Purulent discharge may be minimal
- Menstrual irregularities
- Chronic pelvic pain, vaginitis, dysuria
- Rectal infections
  - No sx or
Infections in pregnancy

- Affects mother and fetus
- Salpingitis, PID
- PROM, Preterm labor or birth
- Chorioamnionitis
- Neonatal sepsis, IUGR
- Postpartum sepsis

Screening guidelines

- All women at risk
- First prenatal visit
- Risky behavior, rescreen at 36 weeks
- Concomitant screening for Chlamydia, Syphilis

Treatment

- cefixime 400mg po 1 time OR
- Ceftriaxone 125mg IM X1. Treat for Chlamydia at same time

Treat partner at the same time

Syphilis

- Motile spirochete gram negative
- Transmission through micro-abrasions of the skin, kissing, biting, oral-genital sex, illicit sex, drug use
- Transplacental transmission may occur
- Lowest rate in years

Primary Syphilis

- Early stage - Primary
  - chancre
  - fever
  - weight loss
  - malaise

Secondary Syphilis

Syphilis (cont’d)
Secondary stage
- condylomata lata
  - vulva
  - acute arthritis
- enlarged liver and spleen
- enlarged lymph nodes
- chronic sore throat with hoarseness

Treatment
- DOC: penicillin
- Only proven tx for neurosyphilis, congenital, during pregnancy
- desensitization
- Alternatives: doxycycline, tetracycline, erythromycin (some resistance)

Follow up
- Monthly
- May need retreatment
- Sexual abstinence during treatment
- Partners need to be evaluated and treated

PID
- Infection of fallopian tubes, uterus, ovaries, peritoneal surfaces
- Many organism causal
- Gc/Chlamydia (> 50 %)
- Results from ascending infections
- End of menses common time for ascension

Symptoms
- Abdominal Pain in all types of infections
- Acute: severe, incapacitating
- Adnexal tenderness, CMT
- Urethral or cervical discharge
- Fever > 39°
- Peritonitis

Development may also occur
- Childbirth
- Post Abortion
- Pelvic surgery

Risks: young, multiple partners, new partner, STI, IUD if > 1 partner
Results of infections
- ↑ risk of ectopic pregnancy
- ↓ fertility
- Dysparunia
- Pelvic adhesions
- Tuboovarian abscess

Screening and DX
- Menstrual hx, sexual history, STIs
- Pelvis surgeries, abortions

CDC criteria for DX
- Fever > 38.3
- Abnormal vag/ cervical discharge
- ↑ sed rate
- + GC/ chlamydia
- + physical findings

Treatment
Parenteral:
- Cefotetan 2 g IV every 12 hours PLUS Doxycycline 100mg IV or orally every 12 hours
Oral:
- Ofloxacin 400mg orally BID X 14 days
With or without
- Metronidazole 500mg BID X 14 Days

Nursing considerations
- Finish all treatment
- Secondary prevention education
- Safer sex, barrier methods, regular routine screening, no IUDs
- Refrain from intercourse during treatment
- Emotional support
- Social service assistance prn

Viral infections

HPV
Herpes
Hepatitis

HIV
HPV: Human Papilloma Virus
- Common infection
- Vagina, cervix, labia, anal-rectal
- May multiply, cause difficulty with urination, defecation, mobility, fetal descent
- Fetal exposure during childbirth
- Usually painless unless irritated

- Many genotypes
- Many types associated with cervical cancer (16, 18, 31, 33, 35)
- Not reportable

**HPV**

- Transmission: vaginal, oral or anal sex
- Dx: often found on routine PAP smear
- Sx: painless warts, pruritus
- Tx: wart removal, keep watching PAP for any cervical dysplasia

**Risk factors**
- Sexually active
- Cigarette smoking
- Pregnancy
- Long term OCP use (>5 years)

**Screening and DX**
- Symptoms: none, vaginal discharge, itching, post coital bleeding, lesions
- Visual examination
- PAP smear
- Colposcopy and biopsy
- HPV DNA testing

**Treatment**
- Goal: removal of warts, relief of S/SX
- Treatment: Imiquimod, podophyllin, podofilox
- In Pregnancy: cryotherapy, surgical removal
- High incidence of reoccurrence
- Comfort measures during treatment
- Regular condoms use
- PAPs

**Immune system boosters**
- Reduce stress
- Diet
- Rest
Herpes Simplex

- Wide spread especially in women
- Signs: painful recurrent genital ulcerations
- HSV-1, HSV-2

Initial infection lasts 2-3 weeks
- multiple painful lesions
- Fever, chills, dysuria
- Macules, papules, pustules

Recurrent HSV-2

- Systemic symptoms absent
- Recurrent lesions unilateral
- Last 5-7 days
- Vesicles to ulcerations
- Cervicitis possible

HSV: Patient Education

- When are they able to pass on the infection?
- What triggers a break-out?
- Suppressive therapy

Herpes and pregnancy

- Adverse effects on mother and infant
- 1st trimester infection ↑miscarriage rate
- Neonatal herpes potentially fatal - 60% / disabling in 50% who survive
- Transmission highest with primary contraction near term
- Lower with recurrent herpes

Management

- Viral culture
- Systemic antivirals if non pregnant
- No cure
- Suppressive therapy
- 1st clinical episode in pregnancy treat with acyclovir
- Comfort measures
- If active lesion C-section

Prevention

- Abstinence
- Consistent condom use
– Use of lubricant with condoms
– No sex from predrome > lesion healed
– If using acyclovir - use contraception
– Concentrates in breastmilk
– No sharing of intimate articles

Follow up

- Associated with ↑ cervical dysplasia
- Regular PAPs, GYN exams
- Avoidance of precipitants
  - Stress
  - Trauma
  - Ultraviolet light
  - Menstruation, febrile illness, chronic illness

Viral infections: Hepatitis

- Inflammation/ swelling of the liver

Types

- A, B, C, D, E
- Most common in US
  - A
  - B
  - C

Hepatitis A

- Transmission: fecal-oral route
- Contaminated milk, shellfish, polluted water, person to person
- Also transmitted through sexual contact
- Daycare centers: poor handwashing technique

Symptoms

- Flu-like symptoms: malaise, fatigue, abdominal pain, pruritis, RUQ pain
- Several days later jaundice may appear
- Recovery 1-2 weeks to several months
- IgM detected 5-10 days after exposure
- If infected: Immune globulin
- Avoid acetaminophen, alcohol

Treatment

- Supportive:
good diet
IV fluids

Prevention
– Sanitation
– Hygiene
– Immunization

Hepatitis B
Transmission
– Blood/body fluids
  – Perinatal 10-90% transmission

Risk factors
■ STIs
■ Multiple partners
■ IV drug use
■ Behaviors associated with blood contact
  – Dialysis, healthcare workers, blood transfusions

Symptoms
■ Flu-like symptoms: malaise, fatigue, abdominal pain, pruritis, RUQ pain
■ Later
  – clay-like stools
  – dark urine
  – ↑ abdominal pain
  – jaundice

Prognosis
■ May be fatal
■ 5-10% chronic carriers
■ 25% carriers die of hepatocellular carcinoma, cirrhosis

Management
■ Symptomatic care
■ Recovery 3-16 weeks
■ Increased bed rest
■ High protein, low fat diet
■ Avoid alcohol, acetaminophen
■ Pregnant exposure: immune globulin HB vaccine within 14 days

Prevention
■ Avoidance of sharing personal hygiene items (razors, toothbrush)
Avoid sharing blood, body fluids
Safer sex
Infant immunoprophylaxis at birth
Immunoprophylaxis of household members, sexual partners

Hepatitis C
Most common blood-borne infection in US (14% of population)
70% of these progress to chronic hepatitis
Transmission: easily through blood, some through body fluids

Risk factors
IV drug use
STI: Hep B, HIV
Multiple partners
Blood transfusion
infant of HCV + mother (4%)
If mother HCV+ and HIV+ 19%

Symptoms
Asymptomatic (80%)
Flu-like symptoms, fatigue, jaundice, abdominal pain

Screening:
Detection of Anti –HCV antibodies
No immunizations available

Treatment: Interferon and Ribavirin
more effective with Genotypes 2+3

Comparison of Hepatitis Viruses
HIV
RNA retrovirus
Transmission: blood, body fluids
Highest increase now in women
Characterized by severe depression of the cellular immune system
Opportunistic infections: Pneumocystic carinii, candidai esophagitis, HSV, HPV, cervical dysplasia, wasting, syphilis

Symptoms
influenza-like illness
fever, night sweats
generalized lymphadenopathy
sore throat
Diarrhea, weight loss
- rash

Possible GYN signs
- Recurrent yeast infections
- Chronic PID
- Severe HSV2
- Genital warts
- Cervical dysplasia

Diagnosis
- seroconversion 6-12 weeks
- Leukopenia, thrombocytopenia
- ↑ sed rate
- ↓ T-cell, CD4 counts (a WBC)
- HIV-1, HIV-2 antibody tests (ELISA)
- Rapid test
- Confirmation: Western blot, immunoassay (IFA)

Counseling
- Pre-test
- Post-test
- Confidentiality
- Interval of testing
- Treatment
- Prevention

Pregnancy
- Does not exacerbate HIV
- Continue medication regimen
- Amniocentesis may ↑ transmission
- Most transmissions @ childbirth, BF
- Infant treated X 6 weeks AZT
- Serial testing 3-15 months
- Treatment of mother is lifetime
- No breastfeeding in US

Other Vaginal infections
- Bacterial vaginosis
- Group B Streptococcus
Candidiasis
Trichomoniasis
Bacterial vaginosis
- Caused H vaginitis, Gardnerella
- Associated with PTL and birth
- May be caused by PH changes, ↓ lactobacillis
Symptoms
- Increased watery discharge
- “fishy odor”
- Puritis
Treatment: metronidazole (not ok with BF)

Group B Strep
- Most common cause of neonatal sepsis and meningitis in US
- 15-28% women colonized with bacteria
- Most women asymptomatic, bacturia
- Neonate infections
  - Early: w/in 7 days
  - Late: 1 week- 3 months
Risk for early onset
- Preterm birth
- Prolonged ROM
- Maternal fever
- Previous GBS infant
Neonatal symptoms: severe respiratory distress, septic shock
  *High rate of mortality

Late onset GBS
- Meningitis in 85%
- Mortality 0-23%
- 50% neurological sequela
Diagnosis:
  - bacterial cultures (vaginal-rectal)
Treatment: antibiotics in labor/ROM

Candidiasis
- Transmission to infant at birth, person to person via contaminated hands, nipples, bottles
- Usually benign:
  - Thrush
Diaper candidiasis

- Worse if cleft lip/palate, immuno-compromised, antibiotic tx

Vulvovaginal Candidiasis

- Fungal or yeast infection

Causes

- Sx: thick, white vaginal discharge
- Associated sx: severe itching, dysuria and dyspareunia
- Tx: miconazole cream (topical) = Monistat, fluconazole (oral) = Diflucan

Trichomoniasis

- Anerobic one-celled Protozoa with characteristic flagellate

Symptoms

- Asymptomatic
- yellow-green discharge
- Frothy, malodorous
- Vulvovaginitis, pruritis

Trich: Patient Teaching

- Both partners must be treated
- Avoid intercourse until cured

Screening

- History of present symptoms
- Speculum exam
- Wet mount

Treatment: 2 G metronidazole

- treat all sexual partners

Pediculosis Pubis

- Parasite: Phthirus
- Transmission: intimate sexual contact, shared towels and bed linens
- Sx: itching!
- Tx: 1% permethrin cream, washing linens

Scabies

- Parasite: Sarcoptes scabiei
- Transmission: intimate sexual contact in adults
- Sx: itching, signs of burrowing (furrows)
- Tx: 5% permethrin cream, wash linens

Women’s Health Breast disease

- A breast lump of any kind is upsetting
Refer to healthcare provider for clinical breast exam

**Benign conditions of the breast**

- Fibrocysts
- Fibroadenomas
- Lipomas
- Nipple discharge
- Mammary duct ectasia
- Intraductal papilloma

**Fibrocysts: most common condition**

Normal hormonal stimulation causes the breasts’ milk glands and ducts to enlarge, and in turn, the breasts may retain water.

- Tender, painful lumpy breasts
- Cysts (pockets of fluid), often multiple
- Areas of thickening
- Fibrosis (scar-like connective tissue)
- Often bilateral

- Fluctuates with menstrual cycle (Cyclical estrogen/progesterone)
- May worsen until menopause

- 70% non proliferative
- 26% proliferative without atypia 2X risk
- 4% proliferative with atypical hyperplasia 4X risk of Br CA

**Diagnosis**

- Ultrasound
  - Fluid filled
- Mammography
- Fine needle aspiration
- Core biopsy

**Treatment**

- Analgesics- Tylenol, NSAIDS
- Supportive Bra
- Heat
- Oral contraceptives
- If severe – diuretics, fluid restriction
- Removal of nodules? May return
Megavitamins? ↓ Caffeine? ↓ Smoking?

**Fibroadenomas**
Solid, encapsulated, non-tender, discrete lump usually < 3 cms

**Diagnosis**
- Client history
- Physical exam
- Mammogram, ultrasound, MRI
- FNA

**Treatment**: surgical excision or periodic observation

**Lipomas**
- Soft fatty tissue
- Cause unknown
- More common in older women
- Clinical manifestations:
  - palpable soft mass on breast or chest wall
  - Mobile, nontender
- Diagnosis: mammogram
- Treatment: surgical excision

**Nipple discharge**
- Common in pregnancy, after coitus
- Physiological: eating, stress, nipple stim
- Endocrine related: thyroid disorder, pituitary tumor
- Malignancy
- Mammary duct ectasia
- Intraductal papilloma

**Galactorrhea**: bilateral spontaneous milky discharge

- Normal in pregnancy
- Increased prolactin levels caused by
  - Trauma, Chest wall surgery
  - Medications: ocp, phenothiazides, Tagamet, opiates, antiemetics, marijuana, long-term alcohol use

**Inflammation of the ducts behind the nipple**
- Thick, sticky white, brown, green, purple discharge
- Burning, itching, pain or palpable mass behind nipple
Work up: mammogram, aspiration and culture of fluid
Treatment: antibiotics, I+D, surgical removal

Intraductal papilloma

Serous, or bloody, unilateral, spontaneous nipple discharge
Age 30-50
Too small to palpate
Mammogram
Surgical excision

General evaluation of discharge

Pt history and physical exam
Evaluation of fluid microscopically
Mammogram
Serum prolactin level (8-10 am best)
Thyroid profile
Pregnancy test
Medication/ street drug evaluation

Malignant conditions

Breast Ca detected on mammogram before it can be felt
90 % of breast lumps detected by the women
20-25% are malignant
Any unilateral lump, discharge, pain is more ominous that bilateral
All lumps need follow up

Follow up
Mammogram
Mammograms have 90% sensitivity
Ultrasound needed for dense breast tissue

Screening guidelines for Breast Cancer detection (American Cancer society, 2003)

Risks for Breast CA

Female
Ageing
Family/ personal history
Race/ethnicity
HRT recent/prolonged)
Previous breast disease
High tissue density
Obesity
Early menarche< 12/ late menopause>55

Suspicious finding for Br CA

- Early
  - Single, non tender, firm to hard mass with ill defined margins, mammographic finding

- Late
  - Skin dimpling or nipple retraction, edema
  - Axillary lymphadenopathy
  - Unilateral breast enlargement
  - Fixation of mass to skin or chest wall

Clinical symptoms

- Round, rubbery, non tender; usually solitary
- Grows slowly over time
- May increase in size with pregnancy
- No change in size/tenderness with menstrual cycle
- Age 15-35

- Hispanic American: 40.5%
- Native American: 12.5%


Most common lumps caused by

- Fibrocysts
- Fibroadenoma
- Breast ca

Care Management

Assessment:

- History of lump/breast mass/ discharge
- Interval between discovery and seeking help
- Presence of pain
- Association with menstrual cycle
- BSE/ provider screenings/ mammogram
- Diet, smoking, BCP,
- Ability to cope, stressors
- Risk factors for breast ca

Physical exam

- Breasts for symmetry
- Masses(size-number-consistency-mobility)
- Skin changes
Nipple discharge

Nursing Actions

Facilitate appropriate care
Teach BSE
Provide written and verbal educational material
Encourage verbalization of fears: treatment, diagnosis, body image
Pain strategies: support bra, NSAIDS, Tylenol, OCP
Refer to support group PRN

Benign neoplasms of the ovaries

Neoplasm: New growth or tumor which may be benign or malignant.

Follicular Cysts

Develop in ovaries of young women
Mature graafian follicle fails to rupture
Cyst usually asymptomatic unless it ruptures
If ruptured – severe pelvic pain
If unruptured shrinks after 2-3 cycles

Corpus Luteum Cysts

Occur after ovulation
May be caused by increased progesterone production
Pain, tenderness over the ovary
Delayed, irregular, prolonged menses
Rupture may cause hemorrhage
Usually disappear within 1-2 cycles

Polycystic Ovarian Syndrome

Multiple follicular cysts, usually bilateral
Ovaries double in size
High levels of estrogen, testosterone, luteinizing hormone (LH)
Decreased FSH
Associated with problems with hypothalamic-pituitary-ovarian axis

Clinical manifestations

Obesity
Acne
Hirsuitism
Irregular menses
Amenorrhea – menstrual dysfunction
Impaired fertility

45% Impaired glucose tolerance, hyperinsulinemia – glucophage (Metafermin)

Management of Functional Cysts

- Serial pelvic exams/ ultrasound
- analgesics
- OCP
- > 6-8 cm: remove
- GnRH for PCO
- Ovulation inducing drugs for fertility

Nursing care

- Education regarding treatment options
- Pain management
- Comfort/ heat/ relaxation
- Surgery
- Preop/postop
  - Infection; incision care, possibility of recurrence, follow up

Danger Signs

- Pain with fever and vomiting
- Sudden severe abdominal pain
- Faintness dizziness weakness
- Shock

Ovarian Fibromas

- Solid neoplasms
- Develop from connective tissue
- Usually after menopause
- Size: nodule-masses > 23 KG!
- Unilateral
- asymptomatic

Dermoid cysts

- Germ cell tumors
- Childhood occurrence
- Contain hair, hair, teeth, bones
- Unilateral/bilateral
- Usually asymptomatic
- Surgical removal

Uterine Polyps
Tumors on pedicles (stalks)
- Endometrial/cervical origin
- Most common benign tumor of the endometrium/cervix during reproductive years
- Etiology: unknown; inflammation/hormones
- Signs: pre/postmenstrual or postcoital bleeding

**Collaborative care**
- Clinical management: surgical removal
- Nursing care: Information about procedure
- Encourage deep breathing/relaxation
- Post op: nothing in the vagina for one week
- S/s of infection
- Call provider if heavy bleeding

**Leiomyomas**
- Slow growing benign fibroid tumors found in the muscle wall of the uterus
- Most common in African American or nulliparous
- Growth influenced by
  - Ovarian hormones
  - BCP
  - Pregnancy
  - HRT
- Spontaneously shrink after menopause
- Rarely malignant

**Clinical manifestations**
- Irregular enlargement of the uterus
- Often asymptomatic/Increased menstrual flow, abnormal uterine bleeding, clots
- Irregular or painful periods, backache
- Increased urinary frequency
- Constipation
- Bloating

**Assessment**
- History of symptoms
- Physical exam
- Pregnancy test
- Ultrasound
- Laparoscopy: ovarian vs uterine mass
- Nursing dx: risk for pain, anxiety, dyspareunia

**Management**
Medical: GnRH: Lupron, Synarel, (used short term <6 months)

NSAIDS

Surgical: myomectomy

Laser surgery: ablation, electrocauterization, UAE (infertility issues)

Hysterectomy

Nursing care

Preop*: education about type of procedure, risks and benefits

Desire for future fertility

Post op education
  – Next menstrual period possibly Irreg
  – Discuss s/s of infection/ heavy bleeding/pain/ urinary retention/ abnormal vaginal discharge
  – Avoid constipation
  – Nothing in the vagina for 2 weeks post op

Malignant tumors

Endometrial Cancer  most common
  – Post menopausal bleeding
  – metrorrhagia

Cancer of the ovary
  – Highest incidence 50-60 yrs
  – Silent dz: no bleeding, discharge or pain
  – > 5 cm requires careful work up

Cervical Cancer:

HPV +

PAP

Menopause

Definition of Menopause

No menstrual flow or spotting for one year

Median age 51. Range late 40s-early 50s

Average age has remained the same since the middle ages

Perimenopause (climacteric)

Transition from normal ovulatory cycles to cessation of menses

More anovulatory cycles

Still possibility of pregnancy

Lasts average 5 years

Marked by irregular menses, increased spotting before and after heavier bleeding

Physiologic changes

Menstrual cycles increase in length
Ovarian follicles ↓ sensitivity to LH/FSH
No corpus luteum development means progesterone not produced
Fsh elevates in attempt to make follicle produce estrogen

Physical changes during Perimenopause

Bleeding
Genital changes
Vasomotor instability
Mood and behavior responses
Osteoporosis
CHD

Bleeding
Spotting-bleeding-spotting
Common d/t ↓ corpus luteum functioning
Estrogen production decreases but androgen continues, and converts to estrone
Androgens converted to estrone in liver and fat cells
Obese women commonly have increased dysfunctional bleeding

Genital changes
Atrophy of the vagina and urethra d/t decreased estrogen
Vaginal tissue thins, decreased moisture, less lubrication/ smaller vagina
Sexually active women have less atrophy/dysparunia
Thin women↑ symptoms /less estrogen
Increased vaginal PH increased vaginitis

Treatment options
OTC lubricants: K-Y, Astroglide, Lubrin, Moist again
Consider vaginal estrogen creams
Allow time / foreplay
Keep sexually active to stimulate natural lubrication

Vasomotor instability
Fluctuating estrogen: hot flashes, night sweats, hot flush
Hot flashes: 75-90 % of women lasts 1-5 years
May be precipitated by alcohol, crowded rooms, hot drinks, spicy foods, stress
Night sweats: may cause insomnia, fatigue, loss of sleep, soak linen

Treatment options
Layer clothing
Avoid spicy, hot foods, alcohol
HRT 90 in symptoms% ↓
Progesterone 80%↓
Soy 45%↓
Antidepressants 50%↓
Deep breathing 50%↓
Black cohosh
phyoestrogens

Hormone Replacement Therapy

HRT most effective tx for menopausal symptoms
Should not be taken for disease prevention
Short term 1-3 years benefits may outweigh risks
Cumulative risks
  – Increased risk of blood clots/stroke during first year
  – Increased BR CA after 4 years
  – Women with high risk of BR CA shouldn’t take

Side effects
Breast tenderness
Fluid retention
Pelvic cramping
Periodic bleeding
Headaches, N&V
SI increase in gall bladder disease
(contraindicated in women with gall bladder disease)

Treatment guidelines
Lowest dosage for the shortest amount of time
Taper slowly

Benefits found in WHI
↓ risk of spine and hip fractures
↓ risk of colon ca
Risks outweigh benefits
Estrogen therapy alone did not increase Br CA, did increase bone density
Still caused increased stroke

Nursing care management
Assessment
Physical
Laboratory testing
Personal/ family history of breast/uterine CA, htn, thrombophlebitis, liver, gallbladder disease, undiagnosed uterine bleeding
Menstrual history
- Risks for osteoporosis, CHD
- Women’s perception of this stage
- Knowledge base
- Sexuality
- Support
  - Cultural influences
  - Practices/ remedies previously tried

Mood and behavioral responses
- No concrete evidence ↓ estrogen causes mental health problems
- Epidemiological studies Associates with depression
- Women c/o fatigue, insomnia, depressed mood, emotionally labile
- Life stressors: teenagers, aging parents, widowed, divorced, major illness/disability
- Cultural status: aging issues, loss of status, function, role identity

Nursing assessments
- Ability to cope with stressors
- Persons perception/understanding of life cycle
- Support system
- Coping mechanisms
- Cultural implications: in US, loss of youth and value;
- in India, Far East, South Pacific Island increased status

Health risks associated with Menopause

Osteoporosis
Generalized metabolic disease characterized by ↓ bone density and ↑ incidence of bone fractures
- Osteoporosis affects 25 million women older than 45
- Ageing causes progressive ↓ in bone mineral density

Sobering thoughts….
- During 1st 5-6 years after menopause women lose 6X more bone than men
- Increased osteoporosis related fractures in the last 20 years
- Of those with hip fractures 12-20 die within 1 year
- 50% unable to return to independent living

Women at risk
- Post menopausal
- Caucasian, Asian
- Small bones, thin
- Family history
Osteoporosis: Weight bearing exercises

- Calcium, magnesium, Vit D
  - milk, yogurt, cheese, Non dairy sources legumes, leafy green vegetables, tofu, nuts and foods where bones are consumed such as sardines and salmon
  - Supplements
  - bisphosphonates
  - Dexta scan screening for women at risk, or over 65

Coronary heart disease

- Increased risk after menopause
- Obesity, sedentary lifestyle
- Smoking, alcohol abuse
- high cholesterol
- family history
- diabetes mellitus, hypertension,

CHD prevention

Diet

- Healthful physical activity
- Lipid management (medications)
- Estrogen decreased LHL and total cholesterol, increases HDL, and has direct anti atherosclerotic effects on the arteries

General Health Concerns

- Overweight and obesity
- Physical inactivity
- Low fruit and vegetable intake
- Smoking
- Excessive alcohol
- Unsafe sex
- Genetics

Plan of care

- Weight bearing exercises
- Calcium intake
- DEXA scan if applicable
- Sexuality counseling
- Nutrition
- Exercise
- Medications
- Support groups