OBJECTIVES

- Describe common postpartum complications
- Describe signs, symptoms, and management of postpartum infection
- Define postpartum hemorrhage and methods of estimating blood loss
- Describe signs, symptoms, and management of postpartum hemorrhage
- Describe the active management of the 3rd stage of labor
- Discuss thromboembolic diseases
INFECTION

• Definition: infection with temperature 38 °C (100.4 °F) after delivery
• Types:
  - Endometritis is the most common
  - Urinary tract
  - Breasts
• C/S wound infection 3-4 days post-op
• Causative agents:
  - Anaerobic streptococcus
  - Clostridium
  - Group A or B hemolytic streptococcus

RISK FACTORS:

<table>
<thead>
<tr>
<th>Penileum</th>
<th>Abdominal incision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Factors</td>
<td>Risk factors</td>
</tr>
<tr>
<td>Infected incisions</td>
<td>Diabetes</td>
</tr>
<tr>
<td>Fecal contamination</td>
<td>Hypertension</td>
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<tr>
<td>Posthysterectomy</td>
<td>Obesity</td>
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<tr>
<td></td>
<td>Comorbid treatment</td>
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<td>Immunosuppression</td>
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<td></td>
<td>Anemia</td>
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<td></td>
<td>Prolonged labor</td>
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<td></td>
<td>Prolonged rupture of</td>
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<tr>
<td></td>
<td>Incision</td>
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<td></td>
<td>Prolonged operating time</td>
</tr>
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<td></td>
<td>Abdominal tubal delivery</td>
</tr>
<tr>
<td></td>
<td>Extensive blind incision</td>
</tr>
</tbody>
</table>

POSTPARTUM WOUND INFECTION

• Most common sites:
  - Cesarean surgical incisions
  - Episiotomies
  - Lacerations
• Manifestations
• Therapeutic Management
POSTPARTUM INFECTIONS

- Also known as Puerperal Infection, or sepsis (puerpera refers to postpartum period)
- Types of postpartum infection include: metritis, wound infections, UTIs, mastitis and septic pelvic thrombophlebitis
- Postpartum infections are manifested by a fever (100.4°F or greater) on at least 2 of the first 10 days postpartum AFTER the first 24 hours
- Leading cause of nosocomial infections in the postpartum mother
- PPI delays mother-infant bonding and breast-feeding
- Hospital stay is prolonged

POSTPARTUM INFECTION-CONT

- Contributors
  - The female reproductive tract is "open", and well supplied with blood vessels and other soft tissues that can easily transport microorganisms
  - Acidity of vagina is reduced by lochia, amniotic fluid providing a good environment for bacteria
  - With prolonged rupture of membranes (PROM), endogenous or exogenous flora may enter and ascend the vagina causing infection
  - Microlacerations (may be undetectable) provide portal of entry
  - Dilation of the cervical canal makes it susceptible to bacterial invasion from normal flora

Risk Factors for Postpartum Infection
- Prolonged rupture of membranes
- Duration of labor (greater than 18 hours)
- Colonization of lower genital tract
- Malnutrition, Cigarette smoking, Diabetes, Drug abuse, immunosuppression, radioterization, excessive vagi exams,

POSTPARTUM INFECTION-CONT

- Assessment of patient
  - Lochia changes (color, odor consistency)
  - Episiotomy changes (redness, odor, tenderness, warmth, disruption in the wound incision)
  - Breast amsst for mastitis
  - Assst. for UTIs
  - Fundal tenderness
  - Pain when massaged
- Vital signs (What would you see if an infection was present?)
  - Laboratory findings
  - Blood cultures
  - U/A and culture
PREDISPONING FACTORS

- Prolonged labor (>24 hrs)
- Anemia
- Traumatic delivery
- Premature/ptrolonged rupture of membranes
- Postpartum hemorrhage
- Cesarean birth
- Chorioamnionitis

PHYSICAL FINDINGS

- Large tender uterus and fundus on 3rd PP day
- Lower abdominal pain
- Malaise/extreme lethargy
- Chills, headache, backache
- Foul smelling lochia
- Increased pulse (100-140 bpm)

POSTPARTUM INFECTION TREATMENT

- Broad spectrum antibiotics (Why do we use a broad spectrum medication for infection?)
- Teach client to use squeeze bottle for cleaning perineal area
- Wipe anterior to posterior
- Change peri pads frequently
- Explain side effects of therapy
- Diarrhea for antibiotics
- Safe for BF or pump & dump?
- Instruct pt on prevention on spread of infection
- Maintain adequate fluid intake
- Adhere to medication regimen
- Teach pt to monitor for signs and symptoms of worsening infection
- Teach when to seek MD assistance
- Teach proper hand washing
SPECIFIC POSTPARTUM INFECTION-ENDOMETRITIS/METRITIS

- A specific type of postpartum infection involving the endometrial lining of the uterus
- Occurs in 2% of vaginal deliveries
- Occurs in 10% to 15% of cesarean deliveries
- Infections are often polymicrobial (both aerobic and anaerobic organisms)

METRITIS OR ENDOMETRITIS-CONT

- **Signs and symptoms**
  - Lower abdominal pain
  - Chills
  - Anorexia
  - Malaise
  - Post-partum vaginal discharge
  - Tachycardias
  - Subinvolution

- **Assess**
  - For fever (all VS)
  - Abdominal tenderness
  - Mucopurulent vaginal discharge
  - Labs include: CBC, Blood cultures, urine culture

- **Treatment**
  - Prompt IV antibiotic therapy
  - Antibiotics continued until all signs and symptoms have been resolved for 48 hours
  - Educate mother on hand washing and signs and symptoms of further infection

MASTITIS

- Inflammation/infection of the breast
- Usually involves the ducts and lactiferous glands of the breast
- Associated with milk stasis
- Usually endemic in nature, resulting from Staph aureas which comes from baby’s mouth or mother’s hands
- Not harmful to the baby
- Occurs usually 2nd or 3rd weeks after birth

- **Associated with**
  - Cracked nipples (portal of entry)
  - Massed or shortened feedings (engorgement/stasis of milk)
  - Consistent pressure placed on the breast
  - Incomplete emptying of the breast causing clogged milk ducts
  - Fatigue
  - Stress
**Mastitis**

- **Signs and symptoms**
  - Swollen, tender breasts 2-6 weeks PP
  - Warmth on and around breasts
  - Hard, red lumps
  - Sudden onset of flu-like symptoms
  - Fever 101.2F or higher

- Instruct the mother to continue to breastfeed during antibiotic treatment (or pump, or pump & dump)
- Observe baby for proper latch
- Make sure mother is getting enough rest

- **Treatment**
  - Antibiotics
  - Continued breastfeeding unless abscess forms
  - Heat or ice compresses (used to be only heat as ice slows milk production)
  - Rest
  - Ample fluids

---

**Postpartum Hemorrhage**

---

**Maternal Death R/T Hemorrhage**

- One of three leading causes of maternal morbidity and mortality in the U.S
- Cause of 1/3 maternal deaths
- Defined as blood loss > 500ml after vaginal delivery; >1000ml after C/S

- **Etiology**
  - Uterine atony 80% of cases due to atony
  - Lacerations
  - Hematomas
  - Retained placental fragments
  - Uterine inversion
  - Coagulation disorders

- Most common complication in the PP period
POSTPARTUM HEMORRHAGE

- Manifestations of Uterine Atony
  - A uterine fundus that is difficult to locate
  - Uterine atony/uncontracted uterus: A uterus that cannot maintain a firm tone once massaging is stopped
  - Fundus above expected level
  - Large gush, or slow, steady trickle of vaginal blood
  - Saturation of more than one peri pad an hour
  - Severe, unrelieved rectal pain
  - Tachycardia

POSTPARTUM HEMORRHAGE

- Causes of PP Hemorrhage
  - Uterine atony (number one cause of PPH)
  - Retained placental fragments
  - Trauma and lacerations of the birth canal
  - Uterine inversion
  - Uterine rupture
  - Placenta accreta

- Predisposing factors (risk factors)
  - Multiple gestation/Large infant
  - Multiparity
  - Cesarean birth or previous uterine surgery
  - Placenta previa

TWO TYPES OF PPH

- Primary Postpartum Hemorrhage
  - Occurs within 24 hours of delivery

- Secondary Postpartum Hemorrhage
  - Occurs 24 hours to 6 weeks after delivery

- Most Cases (60%) of postpartum hemorrhage are primary
POSTPARTUM HEMORRHAGE

- Signs of PP Hemorrhage (Primary/Secondary)
  - Uterine atony/uncontracted uterus
  - Large gush, or slow, steady trickle of vaginal blood
  - Saturation of more than one peri pad an hour
  - Severe, unrelieved rectal pain
  - Tachycardia

- Treatment
  - Uterine Atony/Early Hemorrhage
    - Massage the fundus
    - Empty bladder if fundus is displaced
    - Pharmacological interventions
      - IV Pitocin
      - Prostaglandin IM (Hemabate, Prostin)
      - Cytotec (rectally)
      - Mecoprine (IM)
      - Use with caution, increases BP
    - IV solution (LR)
    - Whole blood
    - Uterine packing
    - Bimanual compression
    - Hysterectomy

SECONDARY POSTPARTUM HEMORRHAGE

- Causes
  - Delayed uterine involution
  - Retained placental fragments
  - Inspect placenta after delivery for intactness
  - Attempts to deliver placenta before separation
  - Manual removal of the placenta
  - Placental Accreta
SECONDARY POSTPARTUM HEMORRHAGE TREATMENT

- Oxytocin
- Methrigine
- Prostaglandins/Hemabate/Cytotec
- Ultrasound to identify retained placental fragments
- D&C if fragments are not expelled
- IV solution (LR)
- Whole blood
- Uterine packing
- Bimanual compression
- Hysterectomy if Placenta Accreta is suspected

POSTPARTUM HEMORRHAGE NURSING CARE

- **Priority Assessment**
  - Uterus/Fundus
  - Lochia
  - Vital Signs
  - Skin Temp
  - Skin color
  - Bladder assessment if fundus higher than expected, or deviated
  - Note peripad saturation or pooling of blood underneath patient
  - Monitor VS q 15 minutes or more frequently in an unstable patient

POSTPARTUM HEMORRHAGE

- **Treatment**, Uterine Atony/Early Hemorrhage
  - Massage the fundus
  - Empty bladder if fundus is displaced
- **Pharmacological Interventions**
  - IV Pitocin
  - Prostaglandins IM (Hemabate, Prostin)
  - Cytotec (rectally)
  - Methrigine (IM)
  - Use with caution, increases BP
  - IV solution (LR)
  - Whole blood
  - Uterine packing
  - Bimanual compression
  - Hysterectomy
Clinical Signs of Shock?
- Tachycardia
- Hypotension
- Tachypnea
- Oliguria
- Delayed peripheral capillary refill

Consequence of PPH
- DIC
- Septic
- Transfusion and/or reaction
- Fluid overload
- Anemia
- Sheehan Syndrome

Postpartum Hemorrhage

15-30 minutes after delivery, the uterus contracts to expel the placenta from the endocervix
- Transplacental signal action thrombore (involution) as the myometrium contracts
- 1-5% of cases are chronic, among these typical etiologies:
  - Partial placental retention
  - Retained placental tissue due to placenta retention ejection

Thrombin
Tissue
Tone
Trauma
Other
COOK “BAKRI” INTRAUTERINE BALLOON

- There are now several balloons, but the most available in the US is the Cook “Bakri” Balloon
- Specifically designed for this purpose
- Double lumen (for drainage from above)
- Silicone (non-latex)
- Uterine contour shape
- Good filling capacity (saline)
- Inexpensive
- Easy to use

B-LYNCH COMPRESSION SUTURE

“HEM AND SUSPEND”

WHY A PROTOCOL FOR OBSTETRIC HEMORRHAGE?

- Now a complex series of steps that involve many staff members and departments
- Communications!
- PPH seems to always happen at night or weekends…(when people may be tired or there are less resources)
- We can improve…
CASE EXAMPLE: 24YO G2 P1 AT 38 WKS GESTATIONS INDUCED FOR “TIRED OF BEING PREGNANT”:

- After 8hr active phase and 2 hr 2nd stage, had a NSVD of an 8lb 6oz infant.
- After placental delivery, she had an episode of atony that firmned with massage. A second episode responded to IM methergine and the physician went home (now 1am).
- The nurses called the physician 30 min later to report more bleeding and further methergine was ordered.
- 60min after the call, the physician performed a D&C with minimal return of tissue. More methergine was given.

45 min later a second D&C was performed, again with minimal returns. EBL now >2,000 ml.
- Delays in blood transfusion because of inability to find proper tubing.
- Anesthesia is delayed, but a second IV started for more crystalloid. VS now markedly abnormal, P=144, BP 80/30.
- One further methergine given and patient taken for a 3rd D&C. Now has gotten 2u PRBCs
- After D&C is complete, she had a cardiac arrest from hypovolemia/hyponxia and was taken to the ICU when she succumbed 3 hours later.

FOUR MAJOR RECOMMENDATIONS FOR CALIFORNIA BIRTH FACILITIES:

- Improve readiness to hemorrhage by implementing standardized protocols (general and massive).
- Improve recognition of OB hemorrhage by performing on-going objective quantification of actual blood loss during and after all births.
- Improve response to hemorrhage by performing regular on-site multi-professional hemorrhage drills.
- Improve reporting of OB hemorrhage by standardizing definitions and consistency in coding and reporting.
### Blood Loss

<table>
<thead>
<tr>
<th>Blood Loss</th>
<th>Systolic Blood Pressure</th>
<th>Symptoms and Signs</th>
<th>Degree of Shock</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-150 mL (10-15%)</td>
<td>Normal</td>
<td>Hypotension, tachypnea, diaphoresis</td>
<td>Compensated</td>
</tr>
<tr>
<td>150-300 mL (15-30%)</td>
<td>Slight fall (80-100 mm Hg)</td>
<td>Diaphoresis, tachycardia, sweating</td>
<td>Mild</td>
</tr>
<tr>
<td>300-600 mL (30-60%)</td>
<td>Moderate fall (70-90 mm Hg)</td>
<td>Nausea, pallor, tachycardia</td>
<td>Moderate</td>
</tr>
<tr>
<td>600-1000 mL (60-100%)</td>
<td>Severe fall (&lt;70 mm Hg)</td>
<td>Collapse, shock, tachycardia</td>
<td>Severe</td>
</tr>
</tbody>
</table>

### Products

<table>
<thead>
<tr>
<th>Product</th>
<th>Unit</th>
<th>Contents</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>RBCs</td>
<td>240</td>
<td>Erythrocytes, WBC, plasma</td>
<td>Increase hematocrit 3 percentage points, hemoglobin to 1 g/dL</td>
</tr>
<tr>
<td>Plasstat 50</td>
<td>50</td>
<td>Platelets, WBC, HPC, plasma</td>
<td>Increase platelet count 5,000 - 10,000/mm² per unit</td>
</tr>
<tr>
<td>PFP</td>
<td>220</td>
<td>Thrombopetan, antithrombin 1E, Factor V and X</td>
<td>Increase fibrinogen by 15 mg/dL</td>
</tr>
<tr>
<td>Cryoprecipitate</td>
<td>40</td>
<td>Fibrinogen, factor XIII and XII, von Willebrand Factor</td>
<td>Increase fibrinogen by 10 mg/dL</td>
</tr>
</tbody>
</table>
- Oxytocin (10u) IV or IM with delivery of infant or placenta
- Gentle controlled cord traction
- Cord clamping not delayed beyond 2 min
- Vigorous fundal massage (at least 15 sec) after placenta
TRAUMA TO BIRTH CANAL

- Second most common cause of PPH
- Can include vaginal, cervical, or perineal areas

Lacerations
- **Types**
  - Perineal, vaginal, periurethral lacerations
- **Causes**
  - Descent of fetal head being delivered rapidly
  - Vacuum or forceps assisted deliveries
  - Should be suspected if uterus is firm
  - Bright red bleeding vs. dark red of lochia
- **Treatment**
  - Suture, Analgesics, Ice to area, CBC, H/H, Plts

Hematomas
- Spreading into connective tissue while overlying tissue is intact
- **Types**
  - Vulvar
  - Vaginal
  - Retroperitoneal
- **Symptoms**: Pain, Pressure, Drop in blood pressure for concealed hematomas
- **Causes**
  - Rapid deliveries, Vacuum or forceps assisted deliveries, Extreme, prolonged pushing
- **Treatment**
  - Reabsorb (small)
  - Incision and drain clots
  - Pack and缝合
  - Ligation of bleeding vessel
  - Analgesics
  - Ice
  - CBC, H/H, Plts
TRAUMA ASSOCIATED WITH OPERATIVE DELIVERY

- Maternal
  - Vaginal wall laceration
  - Hematoma
- Infant
  - Ecchymosis
  - Lacerations
  - Abrasions
  - Facial nerve injury
  - Intracranial hemorrhage

FORCEPS ASSISTED DELIVERY

- Long axis of the forceps blades lies over the fetal cheeks and parietal bone
- Check proper application.
- Lock the blades in the center
- Pulls (guides) gently along the curve of the pelvis as the woman pushes

THROMBOEMBOLIC DISEASES
THROMBOEMBOLIC DISEASES (TED)

- Defined as an infection of the lining of
- a vessel in which a clot attaches to the
- vessel wall; ↑ risk for pulmonary
  embolism/death r/t obstruction of circulation to lung.
- Occurs in legs or pelvis
- Incidence < 1% PP

VIRCHOW’S TRIAD

- Venous stasis
- Endothelial injury
- Hypercoagulability

THROMBOEMBOLIC DISEASES TYPES

- Superficial Thrombophlebitis (0.15-1.4%)
- DVT (0.36-3.0%)
- Pulmonary Embolism (0.04-1.2%)
- Septic Pelvic Thrombophlebitis (0.1%)
VENOUS THROMBOEMBOLISM (VTE)

Leading cause of Maternal M&M
Maternal Mortality may exceed 10-15% in untreated DVT due to Pulmonary Embolism;
Proper treatment risk to < 1%!

IMPORTANCE (CONT)

- US Dept of Health and Human Services Agency for Healthcare Research and Quality
- #1 safety practice recommendation in 2001 was appropriate use of prophylaxis to prevent venous thromboembolism
- Estimated cost $10k per DVT, $20k per PE
- 2007 dollars

PULMONARY EMBOLISM

The condition where a plug composed of a detached clot, bacteria or other foreign body occludes a blood vessel in the pulmonary circulation. During pregnancy, 2 types:
- Thromboembolism
- Amniotic fluid embolism
PULMONARY EMBOLISM

- Incidence in PP period 0.5 – 3 per 1000 women
- DVT ↑ risk of PE 3-8x PP
- Causes: Venous stasis
- Hypercoagulation state

PREDISPOSING FACTORS

- Use of oral contraceptives
- Obesity
- Sedentary
- Hemorrhage
- Operative delivery (C/S)
- Smoking
- Heart disease
- Pre-Eclampsia/Eclampsia
- + Lupus Anticoagulant
- + Anticardiolipin Antibody

- Anemia
- Long labor
- Post delivery pelvic infection; hx endometritis
- Varicosities
- ↑ parity; advanced maternal age
- Sickle Cell Disease
- Blood Type other than “O”
DVT & PULMONARY EMBOLISM

...are not likely to be confirmed by clinical diagnosis alone; needs Extensive, invasive and expensive diagnostic evaluation/technology.

PULMONARY EMBOLISM

- Blood clot to the lungs
- Occludes blood flow to the lungs resulting in respiratory distress and possible death
- Symptoms
  - Chest pain
  - Dyspnea
  - Cough
  - Tachypnea
  - Hemoptysis
- Diagnosis
  - Chest x-ray (atelectasis, pleural effusion)
  - ABG’s
  - Supportive Care and Treatment (page 877)

MNEUMONIC GUIDE FOR STEPS OF PATIENT CARE FOR PULMONARY EMBOLISM

C Clinical Findings
L Laboratory Data
O Objective Data
T Treatment
**ASSESSMENT FINDINGS**

- Dyspnea
- Hemoptysis
- Pleuritic Pain
- Tachypnea
- Diaphoresis
- Shock
- Syncope

- HR, BP
- Temperature to 40.5°C (105°F)
- Leg pain/tenderness & swelling, hot to touch, redness along vein
- Change in pain perception
- Anxiety

**DIAGNOSTIC PROCEDURES**

- H&H
- Doppler ultrasound
- Impedance Plethysmograph
- Contrast venography

**ANTICOAGULATION TREATMENT**

- Heparin is unfractionated Heparin
- Enoxaparin (Lovenox) is a low molecular weight Heparin
TREATMENT: LMWH VS. HEPARIN

- Half-life 3-6h vs. 30min
- Less # of injections with LMWH
- Better bioavailability as SQ with LMWH
- Lower osteoporosis with LMWH
- Less monitoring with LMWH
- UFH easier to reverse
- UCSD costs
  - Daily Lovenox $21.33
  - Heparin Q8h $17, SCDs $13.12

VTE PREVENTION IN OBSTETRICS

- All pregnant women will have a risk assessment for VTE performed
- Two options for thromboprophylaxis
  - Mechanical prophylaxis: graduated compression stockings or sequential compression device (SCD’s)
  - Medication administration: unfractionated heparin (UFH) or low molecular weight heparin (LMWH)

RISK FACTOR ASSESSMENT TOOL

<table>
<thead>
<tr>
<th>Classification</th>
<th>Definition</th>
<th>Management options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Risk A</td>
<td>Vaginal delivery</td>
<td>Hydration, Early ambulation</td>
</tr>
<tr>
<td></td>
<td>&lt; 35 years of age</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No additional risk factors</td>
<td></td>
</tr>
<tr>
<td>Low Risk B</td>
<td>Prescribed bed rest (&gt; 4 days) or C/S</td>
<td>Hydration and SCDs (before surgery)</td>
</tr>
<tr>
<td></td>
<td>Cesarean Section</td>
<td></td>
</tr>
<tr>
<td>Moderate Risk</td>
<td>Prescribed bed rest (&gt; 4 days) or C/S PLUS any one of the following risk factors per MD</td>
<td>Hydration and SCDs OR Prophylactic anticoagulation with Heparin or Lovenox and Consult Anesthesia</td>
</tr>
<tr>
<td></td>
<td>&gt; 35 years of age</td>
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<tr>
<td></td>
<td>Obesity</td>
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<td></td>
<td>Current pelvic infection</td>
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<td></td>
<td>Preeclampsia</td>
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<td>Grand multiparity</td>
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<td></td>
<td>Multiple gestation</td>
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<td></td>
<td>Serum varicosities</td>
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<td></td>
<td>Smoking</td>
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</tr>
</tbody>
</table>
### Risk Factor Assessment Tool (Cont)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Definition</th>
<th>Management Options</th>
</tr>
</thead>
</table>
| High Risk      | ≥ 3 moderate risk factors  
  + Extended surgery (C/Myomectomy)  
  + Personal history of VTE  
  + Antiphospholipid syndrome or Thrombophilia | Hydration  
  + IVD%  
  + Extended surgery  
  + Prophylactic anticoagulation with Heparin or Lovenox |
| Very High Risk | Women w/mechanical heart valves  
  + Current DVT or PE  
  + Personal history of DVT with high-risk Thrombophilia (Anti-thrombin III deficiency or homozygous Factor V or II mutations) | Require full anticoagulation with IV Heparin infusion  
  + Consult Anesthesia  
  + Hydration  
  + Prophylactic anticoagulation with Heparin or Lovenox |

---

### Prophylactic Anticoagulation

- **Heparin:** 10,000 – 30,000 units/day SQ in divided doses
- **Lovenox:** 40 mg SQ QD to BID

---

### Classic Triad of Pulmonary Embolism

- **Dyspnea**
- **Haemoptysis**
- **Pleuritic Chest Pain**
Hypovolemic Shock

Subinvolution of the Uterus

- Slower than usual descent into pelvis
- By 2 weeks, uterus is below symphysis pubis and cannot be palpated

- Causes:
  - Pelvic infection
  - Retained placental fragments

- Signs:
  - Prolonged lochia or excessive bleeding
  - Back pain
  - Pelvic heaviness
  - Fatigue

- Treatment:
  - Methrigine or antibiotics depending on cause
  - Teach fundal massage, lochia changes and reduction in fundal size

Causes:

- Pelvic infection
- Retained placental fragments

Other Postpartum Complications
OTHER POSTPARTUM COMPLICATIONS

- Thromboembolic Disorders
  - Most Common
    - Superficial venous thrombosis
      - Often associated with varicose veins
      - Swelling, redness, warmth, pain when walking
      - Treatment
        - Ted hose
        - Rest/analgesics
        - No need for anticoagulants
    - Deep Venous thrombosis
    - Pulmonary Embolism
  - Causes
    - Venous stasis (compression of vessels by large uterus)
    - Hypercoagulable blood (Postpartum)
    - Injury to the blood vessel (Cesarean births)
    - Risk factors see page 709
  - Diagnosis
    - Ultrasound of deep veins to detect disturbance in blood flow
    - MRI
    - Observation and assessment

CESAREAN SECTION

CESAREAN BIRTH

- The cesarean birth rate in the United States continues to increase.
- Medically indicated and elective inductions continue to rise.
- High primary cesarean rate
- Increasing obesity
- The preferred uterine incision for cesarean birth is the low transverse because it is less likely to rupture in a subsequent pregnancy.
**Cesarean Section**
- Birth of the fetus through a surgical incision made in the mother's abdomen

**Indications for c-section**
- Labor failure to progress
- CPD
- Repeat c-section
- Active genital herpes
- Placental previa
- Placental abruption
- Prolapsed umbilical cord
- PIH
- Any life-threatening condition related to the mother or infant

**Technique**
- 2 incisions are made:
  - Abdominal wall (skin incision)
    - Midline vertical incision
    - Pfannenstiel incision
  - Uterine wall
    - Low transverse
    - Low vertical
    - Classic, a vertical incision into the upper uterus

**Skin incisions may not match the uterine incision**
Some women have feelings of inadequacy if they have a cesarean birth.

“Once a cesarean always a cesarean” is no longer the standard of care.

Low transverse uterine incisions reduce the risk of rupture.

Women should discuss VBAC with their providers to determine if a trial of labor is appropriate.

Infant
- Inadvertent preterm birth (requires EDC documentation)
- TTN (transient tachypnea of the newborn)
- PPH (persistent pulmonary hypertension)
- Injury, such as laceration, bruising, fractures, or other trauma
Mood Disorders
POSTPARTUM ASSESSMENT (EMOTIONAL STATE)

- Bonding behaviors
- Self care behaviors
- Blues
- Depression
- Psychosis

POSTPARTUM MOOD DISORDERS

- Postpartum Blues (AKA "Baby Blues")
  - Transient condition
  - 70% of women experience this with childbirth
  - Begins in 1st week, usually resolves by end of puerperium
  - Associated with hormone fluctuations, sleep deprivation & life adjustment to new situation
  - Fatigue, anxiety, mood-swings, crying

- Postpartum Depression
  - Usually occurs in the first 3 months postpartum up until 12 months postpartum
  - Symptoms more severe than "Baby Blues" with disinterest in self, infant and family manifesting
  - Predisposing factors: hormonal fluctuations, medical problems, marital problems, lack of support, financial issues, feelings of isolation,
  - Treatment
    - Psychotherapy
    - Social Support
    - Family support
    - Medications

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  - Family support
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POSTPARTUM MOOD DISORDERS, CONT.

- Postpartum Anxiety Disorders Include:
  - Panic disorder
  - Tachycardia, palpations, SOB, chest pain, fear of dying or going crazy
  - Postpartum OCD
  - Consuming thoughts that she might harm the baby, and fears being alone with the baby
  - Posttraumatic stress disorder
  - Perception of childbirth as a traumatic event, anxiety, avoidance of reminders of the event & may have depression

POSTPARTUM MOOD DISORDERS, CONT.

- Postpartum Psychosis
  - Rare condition
  - Usually within 3 weeks of delivery
  - S/Sx: irritability, hyperactivity, euphoria, grandiosity, poor judgment, confusion, delusions, sleep and appetite disturbances, hallucinations
  - Usually people have a previous psychiatric history

- Treatment
  - Immediate medical attention, hospitalization
  - Antipsychotics
  - Antidepressants
  - Careful monitoring