

Postpartum Complications



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Postpartum Period

or

Postnatal period

- The period beginning immediately after the birth of a child and extending for about six weeks

World Health Organization (WHO)

- describes the postnatal period as the most critical and yet the most neglected phase in the lives of mothers and babies
 - most deaths occur during the postnatal period
 - a time in which the mother's body, including hormone levels and uterus size, returns to a non-pregnant state
 - scientific literature, the term is abbreviated to Px, where x is a number
 - day P2

Common Postpartum Complications

- Hemorrhage
- Perineal pain
- Hemorrhoids and Constipation
- Breast Problems
 - Mastitis
 - Swollen breasts
 - Clogged ducts
- Infections
- Urinary incontinence

Hemorrhage

Definition and Incidence

- Leading cause of maternal morbidity and mortality in the US and worldwide
- Life-threatening event with little warning
 - Loss of > 500 ml after vaginal delivery
 - Loss of > 1,000 ml following c-section
- Classification {in respect to birth}
 - Early / Acute or Primary
 - With 24 hours of birth
 - Late or Secondary
 - >24 hrs but < **6 weeks**

PPH - Causes

- Uterine Atony
 - Marked hypotonia of the uterus
 - Leading cause of PPH
 - 1:20 births
- Associated with
 - High parity
 - Multifetal gestation
 - Traumatic births
 - Use of Magnesium Sulfate
 - Rapid or prolonged labor
 - Use of Pitocin for labor induction

PPH - Causes

- Lacerations of the Genital Tract
 - Cervix; vagina; perineum
- Retained Placenta
 - Very common in very preterm births (20 to 24 weeks)
- Inversion of the Uterus
 - Potentially life threatening
 - 1 in 2,000 to 2,500 births
 - Contributing factors
 - Fundal implantation of placenta
 - Vigorous fundal pressure
 - **Excessive traction applied to the cord**
 - Uterine atony

PPH Hemorrhage Treatment

- Goal
 - Prevent adverse sequela
 - Restoring circulating blood volume
 - Treat the cause of hemorrhage
- Oxygen
 - High concentration
 - Non-rebreather
- IV Fluids
 - Crystalloids
 - Colloids
 - Blood transfusion
- ECG Monitoring

Risk Factors for PPH

- Overdistended uterus
 - Large fetus
 - Multiple fetuses
- Anesthesia and analgesia
- Previous h/o uterine atony
- High parity
- Prolonged labor, oxytocin-induced labor
- Lacerations of birth canal
- Ruptured uterus
- Inversion of the uterus
- Retained placental fragments
- Trauma during labor and birth
 - Forceps-assisted birth
 - Vacuum-assisted births
 - Cesarean birth
- Coagulation disorders
 - idiopathic thrombocytopenic purpura
 - Autoimmune - platelets
 - Von Willebrand Disease
 - Type of hemophilia – Factor VIII deficiency
 - Most common congenital clotting defect
 - Disseminated intravascular coagulation
 - Pathologic form of clotting and consumes platelets, fibrinogen, factor V and VIII
 - Abruptio placenta
 - Amniotic fluid embolism
 - Dead fetus syndrome
 - Severe preeclampsia
 - Septicemia
 - Cardiopulmonary arrest
 - hemorrhage
- Placental abruption
- Placenta previa
- MgSO₄ administration during or postpartum period
- Endometritis

Perineal Pain

- Region between the vagina and rectum
- Experiences the most stretching and bruising during delivery
- Episiotomy site

Hemorrhoids and Constipation

- Results in discharge of blood along with painful defecation

Resolves spontaneously within few weeks

Breast Problems

- Mastitis
 - infection secondary to bacteria gaining entry into breast

from

babys mouth, dirty clothing

- Swollen Breasts
 - engorged with milk
- Clogged ducts
 - result of small clogs in ducts through which milk is passed

out

Common Postpartum Complications

[con't]

- **Perineal Pain**
 - Region between the vagina and rectum
 - Experiences the most stretching and bruising during delivery
 - Episiotomy site
- **Hemorrhoids and Constipation**
 - Results in discharge of blood along with painful defecation
 - Resolves spontaneously within few weeks
- **Breast Problems**
 - **Mastitis**
 - Discussed later
 - **Swollen Breast**
 - Engorged with milk
 - **Clogged ducts**
 - result of small clogs in ducts through which milk is passed out

Common Postpartum Complications

[con't]

- Infections
 - Endometritis
 - Most common
 - Begins as localized infection at the placental site but can spread to entire endometrium
 - Increase incidence after C-section
 - Signs/symptoms
 - Fever >38 degrees C [100.4]
 - Chills; increased HR; anorexia; nausea; fatigue; lethargy
 - Pelvic pain; uterine tenderness; foul-smelling lochia
 - Wound infections
 - From C-section; episiotomy; repaired laceration site
 - Signs/symptoms
 - Erythema; edema; warmth; tenderness; seropurulent drainage; wound separation
 - Mastitis
 - Affects about 1% of women, most of whom are first-time mothers breastfeeding
 - Almost always unilateral developing well after milk has established
 - Typically s.aureus transmitted via nipple
 - Signs/Symptoms
 - Chills; fever; malaise; local breast tenderness; redness; swelling; axillary adenopathy may occur

Postpartum Complications

[Infections]

▫ Urinary tract

- Occur in 2% to 4% of postpartum woman
- Risk factors
 - Urinary catheterization; frequent pelvic exams; epidural anesthesia; genital tract injury; history of UTI's; cesarean birth

▫ Urinary Incontinence

- Typically results from stress incontinence
 - Increase incidence/frequency with parity
 - Effects >23% of woman

Other Postpartum Complications

- Post partum depression
- Sheehan's Syndrome
- Amniotic fluid embolism
- Peripartum cardiomyopathy

Post Partum Depression

- Etiology
 - Unclear, may be biologic, psychologic, situational or multifactoral
- Incidence
 - About 25-85% of women will experience postnatal blues, only 7-17% will develop clinical depression
 - In the United States, postpartum depression is one of the leading causes of the murder of children <1 yr old which occurs in about 8 per 100,000 births

Post Partum Depression

- Risk factors
 - Prenatal depression/anxiety
 - Low self-esteem
 - Stress of child care
 - Life stress
 - Lack of social support
 - Marital relationship problems
 - History of depression
 - “difficult” infant temperament
 - Postpartum blues
 - Single status
 - Low socioeconomic status
 - Unplanned or unwanted pregnancy

Post Partum Depression

- **Controversial**
 - Multiple repeated mega-studies have not linked hormonal changes with postpartum depression. Concluded that it is a myth that hormonal changes lead to depression
 - Symptoms of preexisting mental illness exists
 - Exacerbated by fatigue, change in routine

Other Postpartum Complications

Sheehan's Syndrome

- **Sheehan's Syndrome**
 - Postpartum hypopituitarism caused by ischemic necrosis due to blood loss and hypovolemia during and after childbirth.
 - Rare complication of pregnancy
- Hypertrophy and hyperplasia of prolactin cells causes enlargement of the anterior pituitary, without a corresponding increase in blood supply.
 - Secondly, the anterior pituitary is supplied by a low pressure portal venous system
 - When affected by hemorrhage or hypotension leads to ischemia of the pituitary regions leading to necrosis
 - Posterior pituitary is usually not affected due to its direct arterial supply
- **Complications**
 - Since the anterior pituitary is damaged and loses the cells that normally secrete hormones
 - Prolactin - stimulates lactation
 - ADH - stimulates kidneys to reabsorb water
 - TSH - stimulates the thyroid
 - Cortisol - allows the body to survive in times of severe physical stress, such as when one is sick, and helps other hormones keep blood sugar levels elevated
 - Without these hormones, their respective jobs are not performed, and the signs and symptoms of pituitary damage ensue

Sheehan's Syndrome

- Signs/Symptoms
 - Agalactorrhea (absence and/or difficulties with lactation)
 - Amenorrhea or oligomenorrhea after delivery
 - May be asymptomatic, and the diagnosis is not made until years later, with features of hypopituitarism:
 - Hypothyroidism
 - Tiredness; intolerance to cold; constipation; weight gain; hair loss; slowed thinking; slowed heart rate and low blood pressure
 - Adrenal Insufficiency [Addison's disease]
 - Fatigue; weight loss; hypoglycemia; anemia; hyponatremia
 - Gonadotropin deficiency
 - Amenorrhea; oligomenorrhea; hot flashes; decreased libido
 - Growth hormone
 - Many vague symptoms including fatigue and decreased muscle mass

Amniotic Fluid Embolism

- A rare childbirth emergency
 - Amniotic fluid, fetal cells, hair or other debris enters the mother's blood stream via the placental bed of the uterus and triggers an allergic-like reaction
 - This reaction then results in cardiorespiratory collapse and massive hemorrhaging
 - First formally characterized in 1941
 - rare (between 1 in 8000 and 1 in 80,000 deliveries)
 - fifth most common cause of maternal mortality in the world

Amniotic Fluid Embolism

- Some evidence shows that it may be associated with
 - abdominal trauma or amniocentesis
 - A 2006 study showed that the use of drugs to induce labor, such as misoprostol [Cytotec], nearly doubled the risk
 - Maternal age of 35 years or older
 - Caesarean or instrumental vaginal delivery
 - Polyhydramnios
 - Cervical laceration
 - Uterine rupture
 - Placenta previa or abruption
 - Eclampsia
 - Fetal distress

Amniotic Fluid Embolism

- There is no specific treatment for amniotic fluid embolism
- Initial emergency management is the same as for any other cause of sudden maternal collapse
 - cardiovascular and respiratory resuscitation and correction of the coagulopathy
- However, newer research with animal models suggest that significant embolism of any material is followed by:
 - platelet degranulation
 - pulmonary hypertension due to serotonin and thromboxane
 - systemic hypotension due to vagal stimulation.
- Armed with this knowledge, several women have survived and regained a pulse immediately after ondansetron [Zofran], metoclopramide [Reglan], atropine and ketorolax [Toradol] were administered.

Peripartum cardiomyopathy

- Form of dilated cardiomyopathy
- Defined
 - a deterioration in cardiac function presenting typically between the last month of pregnancy up to 6 month postpartum
- Etiology
 - Unknown
 - Incidence
 - 1 in 1,300 to 4,000 live births
 - can occur in any woman of any racial background, at any age during reproductive years, and in any pregnancy
 - Researchers are investigating
 - cardiotropic viruses
 - Autoimmunity or immune system dysfunction
 - Toxins that serve as triggers to immune system dysfunction
 - Micronutrient or trace mineral deficiencies
 - genetics

Peripartum cardiomyopathy

- Pathophysiology
 - Like other forms of dilated cardiomyopathy
 - heart muscle cannot contract forcefully enough to pump adequate amounts of blood for the needs of the body's vital organs
 - involves systolic dysfunction of the heart with a decrease of the LVEF
 - with associated CHF
 - increased risk of atrial and ventricular arrhythmias
 - Thromboembolism
 - Sudden cardiac death

Peripartum cardiomyopathy

- Signs/symptoms
 - Orthopnea
 - Dyspnea
 - Pitting edema
 - Nocturia
 - Excessive weight gain
 - Palpitations
 - S3 gallop; murmurs of MR and TR
 - Liver failure
 - Embolus
 - Stroke
 - AMI

Peripartum cardiomyopathy

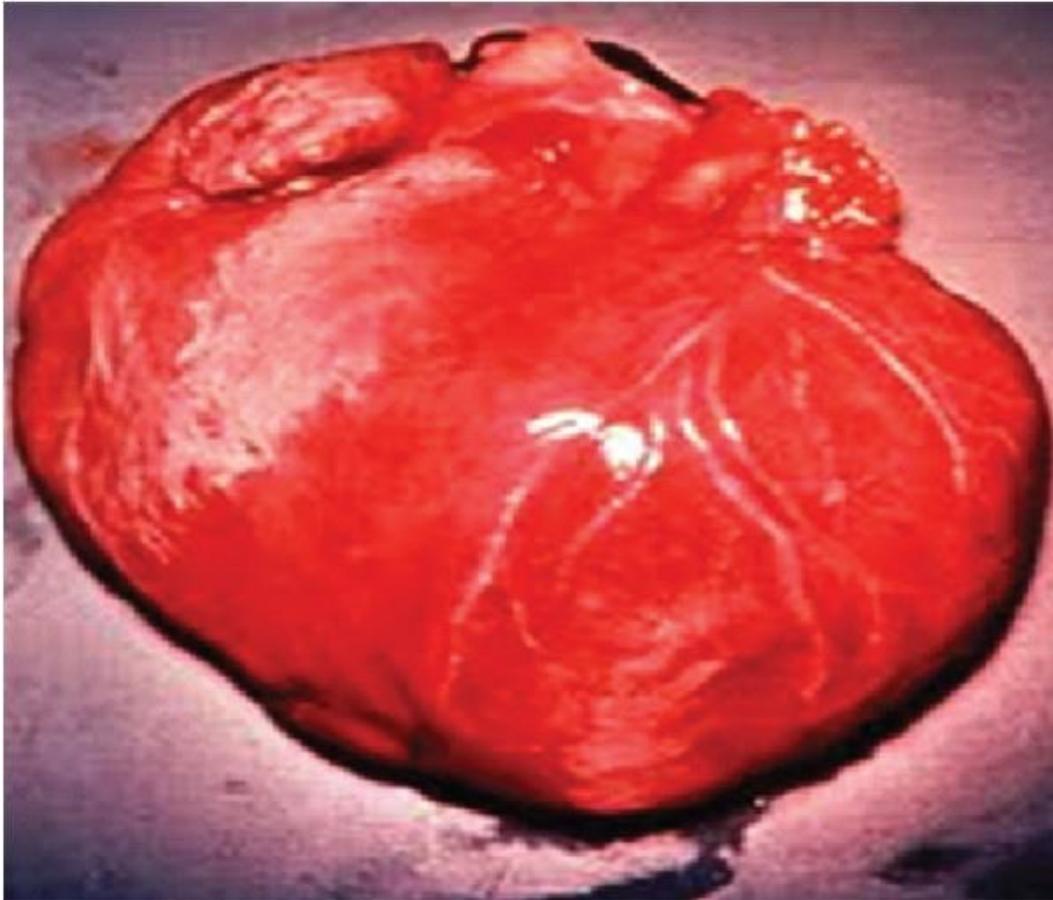
- Early detection and treatment
 - Higher rates of recovery
 - Decreased morbidity and mortality
- Treatment
 - Similar to CHF
 - Diuretics
 - Beta blockers
 - ACE-I
 - Anticoagulation if EF <35%
 - LVAD
 - Transplant

Peripartum cardiomyopathy

Prognosis

- Recent studies indicate that with newer conventional heart failure treatment survival rate is very high at 98%
 - >50% of PPCM patients experience complete recovery of heart function (EF 55% or greater)
 - Almost all recovered patients are eventually able to discontinue medications with no resulting relapse and have normal life expectancy
- It is a misconception that hope for recovery depends upon improvement or recovery within the first six to 12 months.
 - Many women continue to improve or recover even years after diagnosis with continued medicinal treatment
 - Once fully recovered, if there is no subsequent pregnancy, the possibility of relapse or recurrence of heart failure is minimal
- Subsequent pregnancy should be avoided when left ventricular function has not recovered and the EF is lower than 55%
- A significant study reports that the risk for recurrence of heart failure in recovered patients as a result of subsequent pregnancy is approximately 21% or better
 - In any subsequent pregnancy, careful monitoring is necessary
 - If relapse occurs, conventional treatment should be resumed

Peripartum cardiomyopathy



normal heart
375 grams



HCM heart
550 grams

