

Normal and Abnormal Puerperium



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Normal Puerperium

Definition

It is the period of **adjustment** after pregnancy and delivery when anatomical and physiological changes of pregnancy are reversed and the body returns to the normal non pregnant state.. (reproductive tract returns to its normal, non-pregnancy state)



6 weeks in duration. (periods after birth)



- **32%** of women will need social support
- **25%** have breast feeding issues
- **10%** will have postpartum depression.



Kanotra et al, 2007



Stages of Puerperium

- **The immediate puerperium**, the first 24 hours after parturition; when acute post anesthetic or post delivery complications may occur.
- **The early puerperium**, which extends until the first week post partum.
- **The remote puerperium**, which includes the period of time required for involution of the genital organs through the sixth weeks postpartum.



Anatomical and Physiological changes

- Immediately after labor, the woman is in a state of physical *fatigue* in many cases, slight *shivering*, muscular *tremors* and chattering of teeth occur for about ***10 – 15 minutes***.



Temperature:

Usually there is a slight rise during the first day which is known as (**reactionary rise**), not exceed 38°C and drops within 24 hours and not accompanied by increased pulse rate, if it is more than 38°C or for more than 24 hours, it is called (**puerperal pyrexia**).



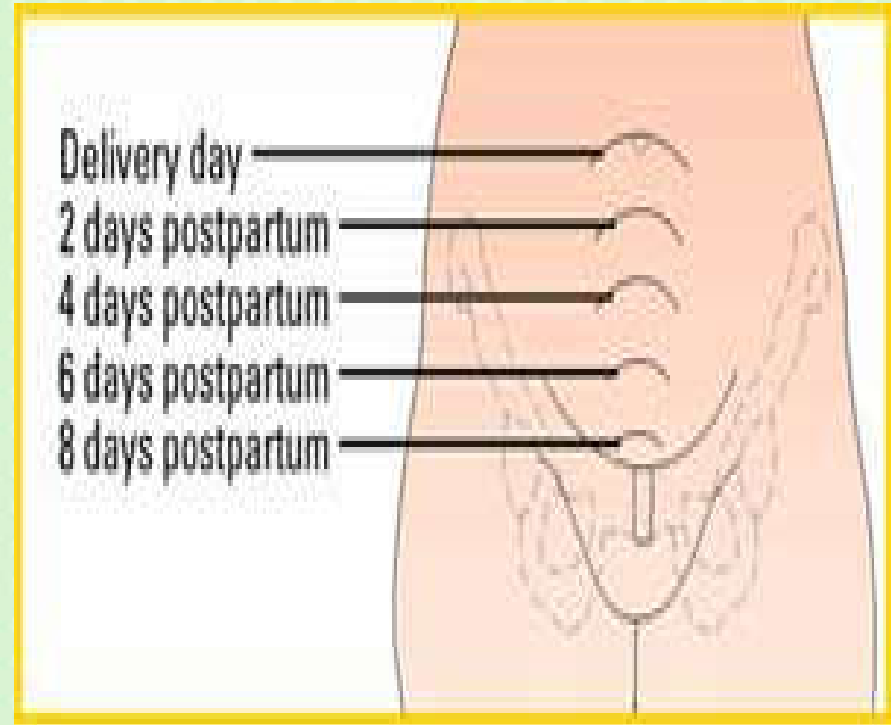
Birth Canal

- Gradually decreases in size
- Vaginal rugae appears after 3 weeks.
- The hymen is replaced by small tags (**myrtiliform caruncle**)
- Some relaxation of the pelvic floor and even damage that may predispose to prolapse or incontinence.



Involution of the Uterus

- Return to the pelvis by about 2 weeks
- Be at normal size by 6 weeks



■ Cervix

- ✓ it never returns to the nulli-parous state.
- ✓ the external os is closed to the extent that a finger could not be easily introduced.
- ✓ *It return to its normal state 1 week after birth*

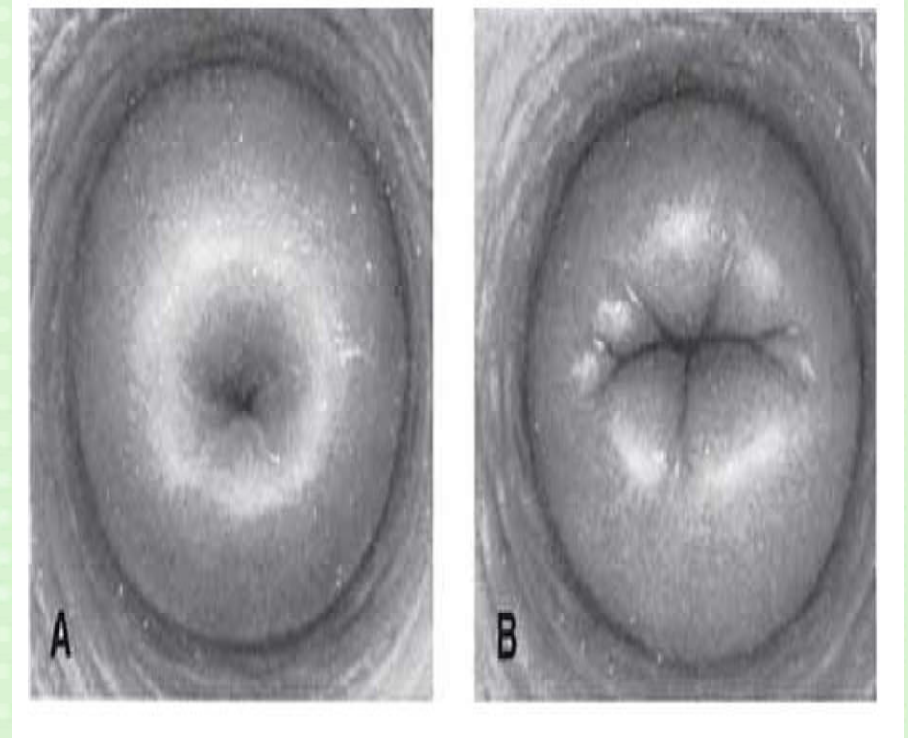
■ Vagina

- ✓ shrinks to a non-pregnant state
- ✓ resolution of the increased vascularity and edema occurs by 3 weeks
- ✓ the vaginal epithelium appears atrophic. This is restored by weeks 6-10.

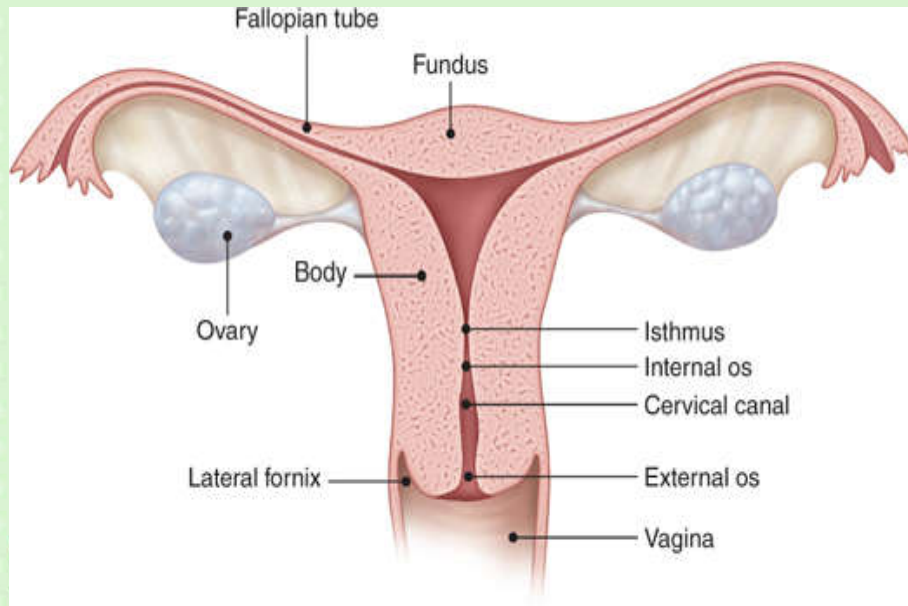


Cervix

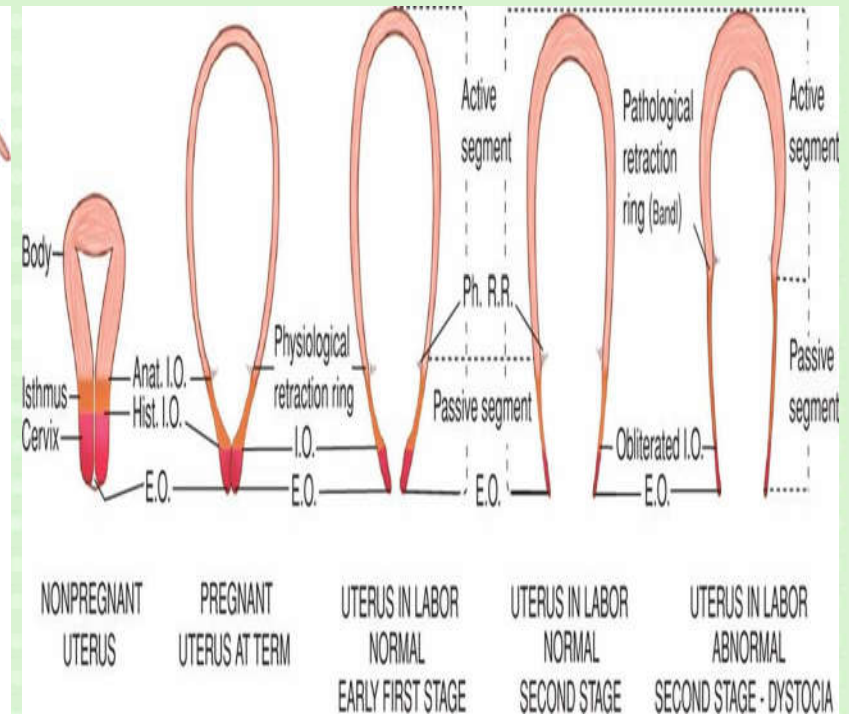
- The lower uterine segment which accommodates the fetal head return to isthmus



Isthmus



Source: G. D. Posner, Jessica DY, A. Black, G. D. Jones: Human Labor & Birth, 6th Edition
www.obgyn.mhmedical.com
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The muscles of the pelvic organs

- Tearing or overstretching of the musculature or fascia at the time of delivery predispose to genital hernias.
- Over distention of the abdominal wall during pregnancy may result in rupture of the elastic fibers, persistent striae, and diastases of the recti muscles.
- Involution of the abdominal musculature may require 6-7 weeks and vigorous exercises are not recommended until after that time.



□ Decidua

discharge comes from the placental site and maintains for 4-6 weeks

- *Lochia rubra*

Red in color for the first 3-4 days

- *Lochia serosa*

Pink in color, maintains for 2 weeks

- *Lochia alba*

White in color, maintains for 2-3 weeks



After Pain

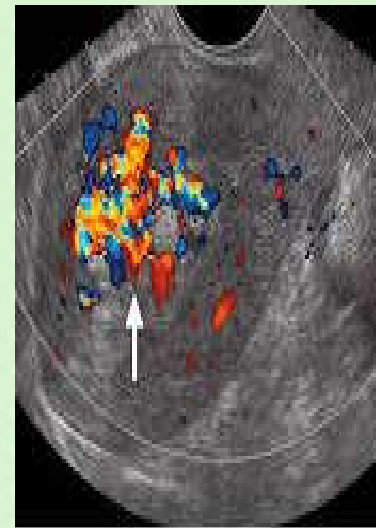
❑ After expulsion of fetus, oxytocin is released from posterior lobe of the pituitary gland in response to the suckling, which facilitates uterine contraction.

❑ Characteristics of after pain:

- Occur during the 1st 2-3 days of puerperium
- Abdominal pains (like cramps) and back pain.
- Strong, regular, and coordinated.
- The intensity, frequency and regularity of contraction decrease after the 1st postpartum day.



Subinvolution



a.



b.



Urinary Tract

- Glomerular function returns in 2 weeks
- Dilated ureter and calyces be normal in 2-8 weeks.
- The bladder is relatively insensitive to intra-vesical pressure (increases residual volume).



Perineum

- ✓ Swelling completely gone within 1-2 weeks.
- ✓ The muscle tone may or may not return to normal, depending on the extent of injury.



Hematological and Coagulation Changes

- Leukocytosis, lymphopenia, and fluctuating hematocrit and Hemoglobin are noticed in first few days postpartum.
- Hypercoagulable state may persist up to 12 weeks postpartum.



Pregnancy-Induced Hypervolemia

- Blood volume returns to normal in 7-10 days postpartum.
- Cardiac output, blood pressure and heart rate follow this pattern.
- Postpartum diuresis is also increased (Release of Na retention).



Constipation

- It is common in the first few days of puerperium and is due to many factors. The woman's food intake is interrupted, there may be dehydration during labor, the abdominal muscles are lax and perineal lacerations make defecation painful.

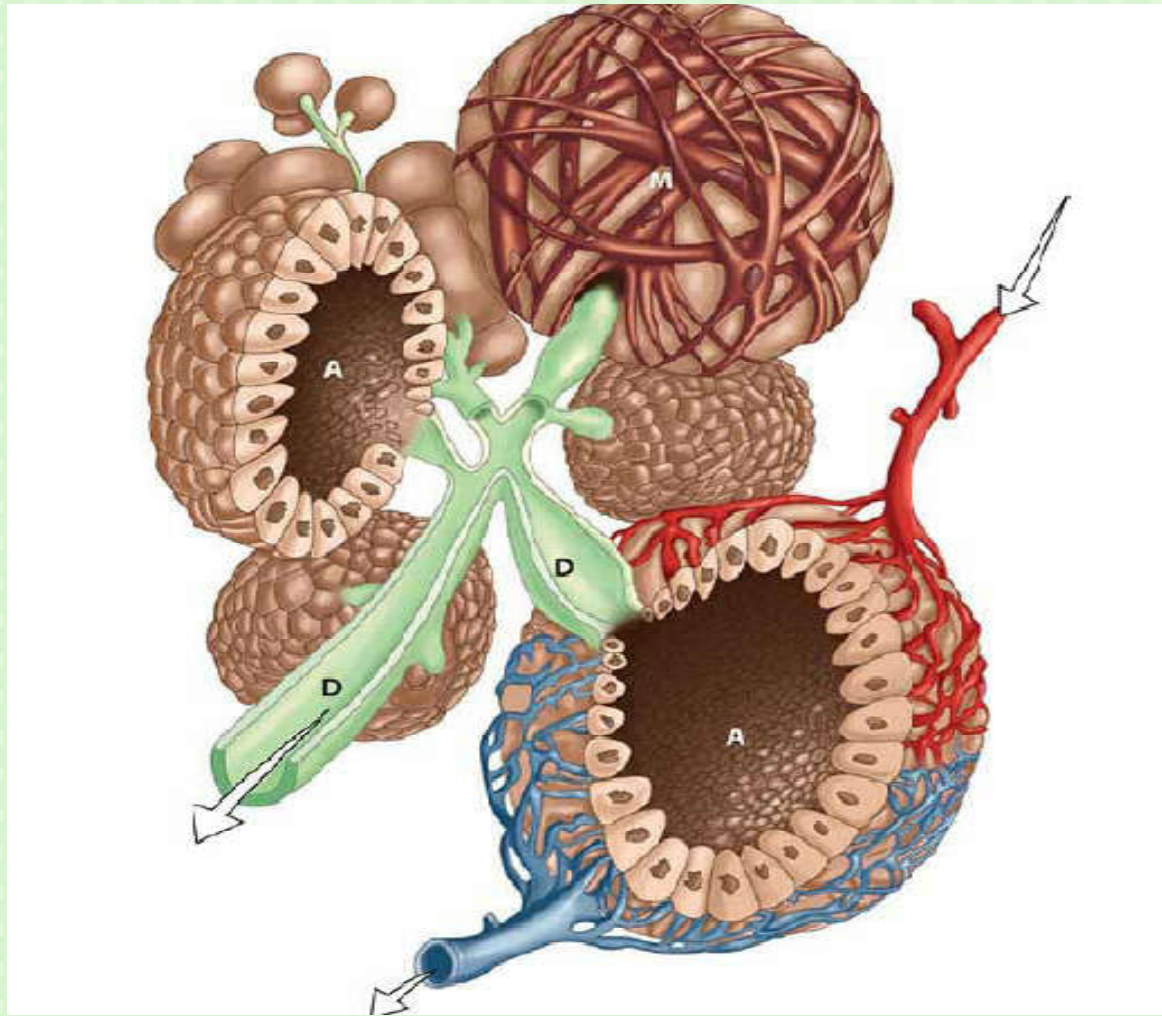


Psychological Changes.

- Mild degree of depression and emotional liability. (normal)
- Puerperal psychosis, confusion with disorientation in time, space and a complete loss of interest in the child (abnormal)



Lactation and Breast Feeding



Colostrum

Human Milk (within 5 days)

Colostrum composition in a Pennsylvania survey

	Average	Minimum	Maximum
Fat (%)	6.7	2.0	26.5
Protein	14.9	7.1	22.6
Lactose	2.5	1.2	5.2
Total solids	27.6	18.3	43.3
IgG (mg/mL)	41.0	14.5	94.8
IgA	1.7	0.5	4.4
IgM	4.3	1.1	21.0

Fat g/100 mL

Total	4.2
Fatty Acids	Trace
PUFA	0.6
Cholesterol	0.016

Protein g/100 mL

Total	1.1
Casein	0.3
α -Lactalbumin	0.3
Lactoferrin	0.2

Carbohydrate g/100 mL

Lactose	7
Oligosaccharides	0.5

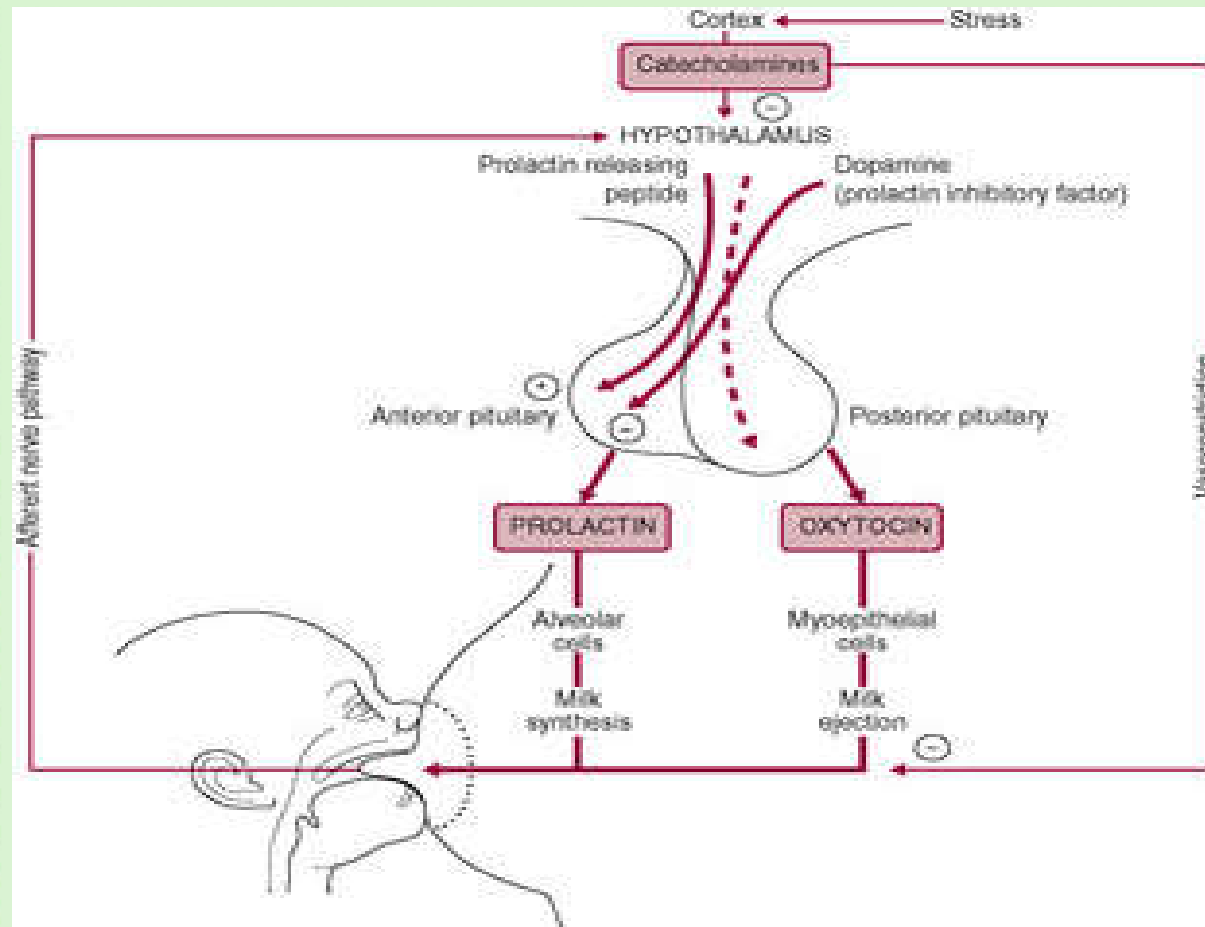
PUFA = Polyunsaturated fatty acids.



- Immunoglobulins are much higher in colostrum.
- Less sugar in colostrum with more proteins than milk.
- Most vitamins are in milk; with Low levels of Vitamin D and virtually absent vitamin K



Physiology of Lactation



Position



Correct



Wrong



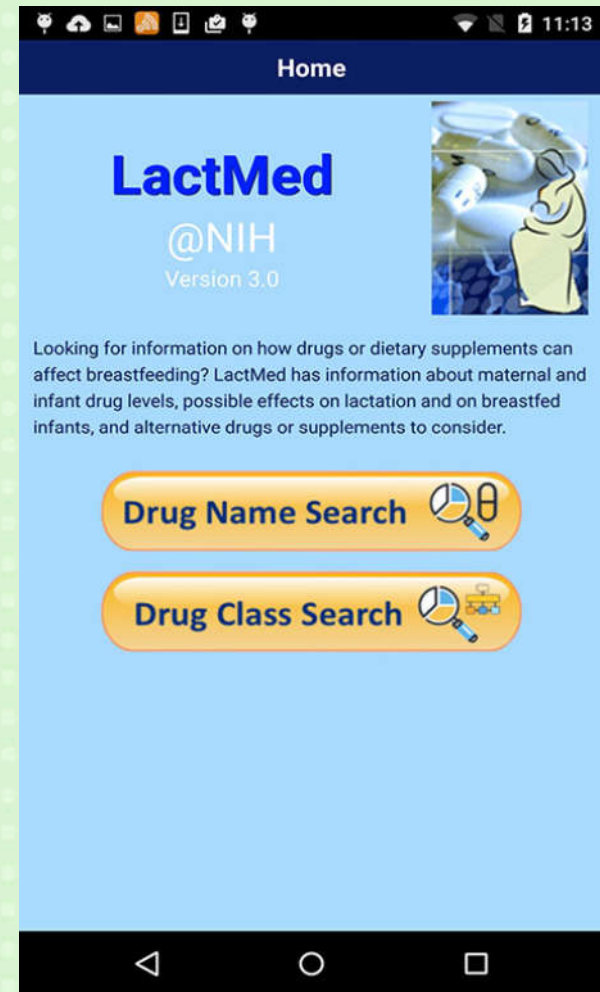
Contraindications to Breastfeeding

- HIV
- Cancer treatment and radioactive isotopes
- Active tuberculosis.
- Alcohol use
- Infants with galactosemia

• Some medications that are secreted in milk With proven side effects.



Mobile App



Management of Painful Perineum

- Cold baths
- Electrotherapy
- Pelvic floor exercises (contract relax technique)
- Teach the mother the correct defecation technique
- Use of an appropriate cushion when sitting.





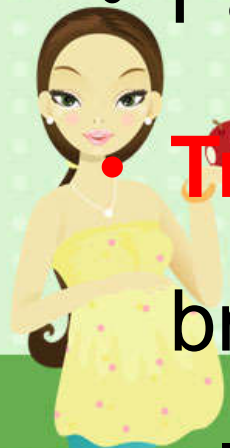
wikiHow to Relax Your Sphincter Muscle



Milk Engorgement

- Usually affects those who do not breast feed their newborns.
- Peak between 3-5 days.
- Pain, tenderness and fever

- **Treatment** includes enhancement of breast feeding, analgesics and breast elevation



Headache and Migraine

- Hypoestrogenemia may provoke headache and migraine few days after delivery.
- Acetaminophen and sedatives may be tried
- Sumatriptan can be used during lactation



Postpartum Urine Retention

Risk Factors:

- C.Section
- Opioid analgesia
- Prolonged labor
- Vaginal laceration
- excessive oxytocin
- catheter during labor



Treatment of Retention

- Failure to void > 4 hours define retention.
- Correct the underlying cause if present
- Urinary catheter to evacuate the bladder
- Fix a foley catheter 24 hours if retention repeated.
- If repeated fix the catheter for a week.



Postpartum Blues

- It is important to screen the postpartum woman for depression (ACOG, 2016b).
- It is fairly common for a mother to exhibit some degree of depressed mood a few days after delivery (Why?).
- In most women, effective treatment includes anticipation, recognition, and reassurance.

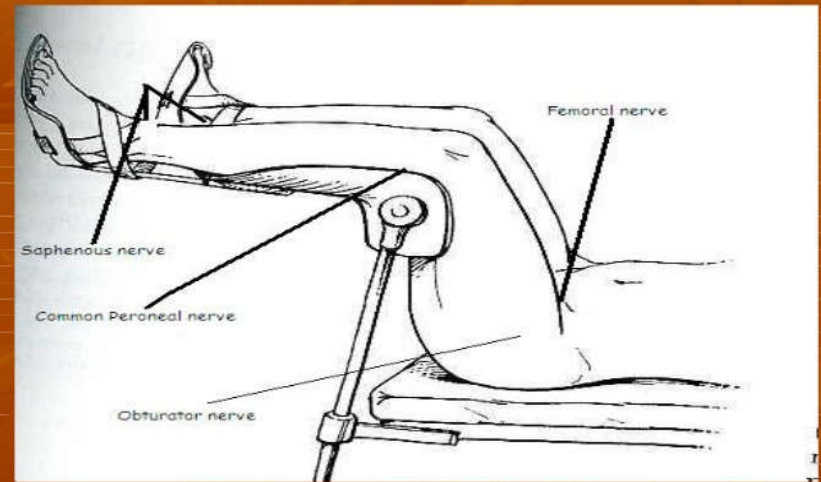


Obstetric Neuropathy

- Mostly due to lumbosacral plexus compression by the fetal head.
- Wrong leg placement or compression of the common peroneal nerve



Lithotomy – nerve injuries



April 26, 2008

25



Puerperal Fever

- A temperature of 38.0°C (100.4°F) or higher after the 1st postpartum day diagnose P.F.
- It is important to roll out reactionary fever and side effect of misoprostol.



Possible Causes

- Milk engorgement
- Sore throat
- Pelvic hematoma
- DVT
- Puerperal Sepsis

UTI

Wound infection

Chest infection

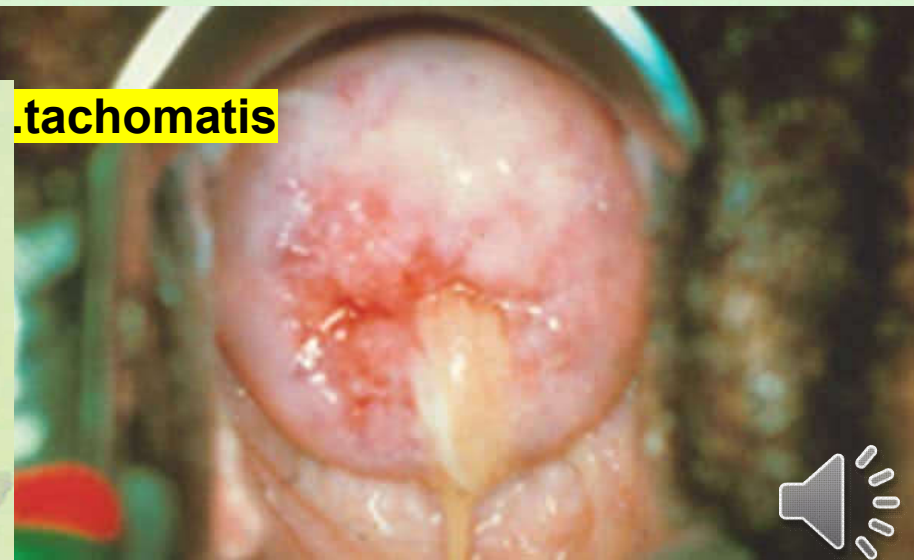
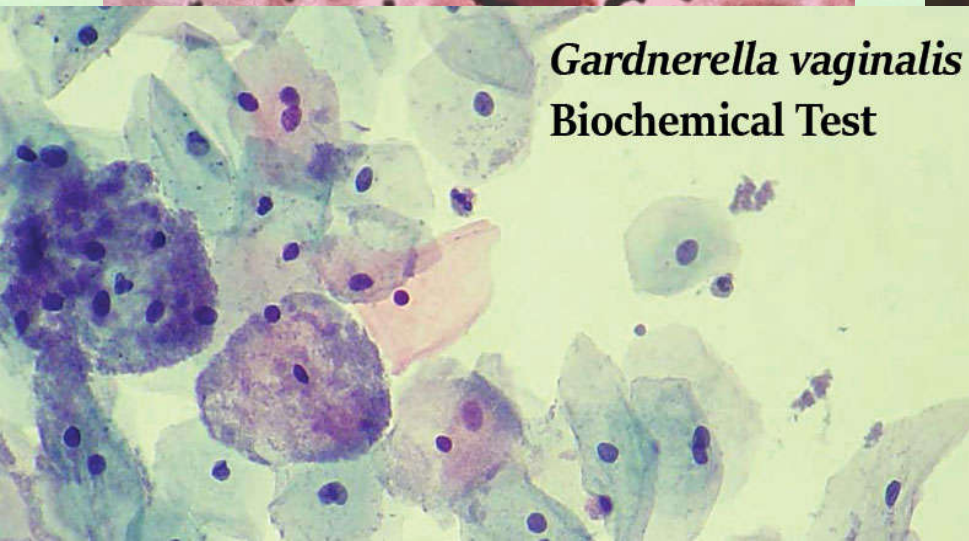


Puerperal Sepsis

- May involve endometritis, endomyometritis and parametritis.
- 25 folds higher with Cesarean delivery.
- **Risk factors** include PROM, chorioamnionitis, debilitating diseases, prolonged labor, low SES, obesity, and frequent pelvic examinations.



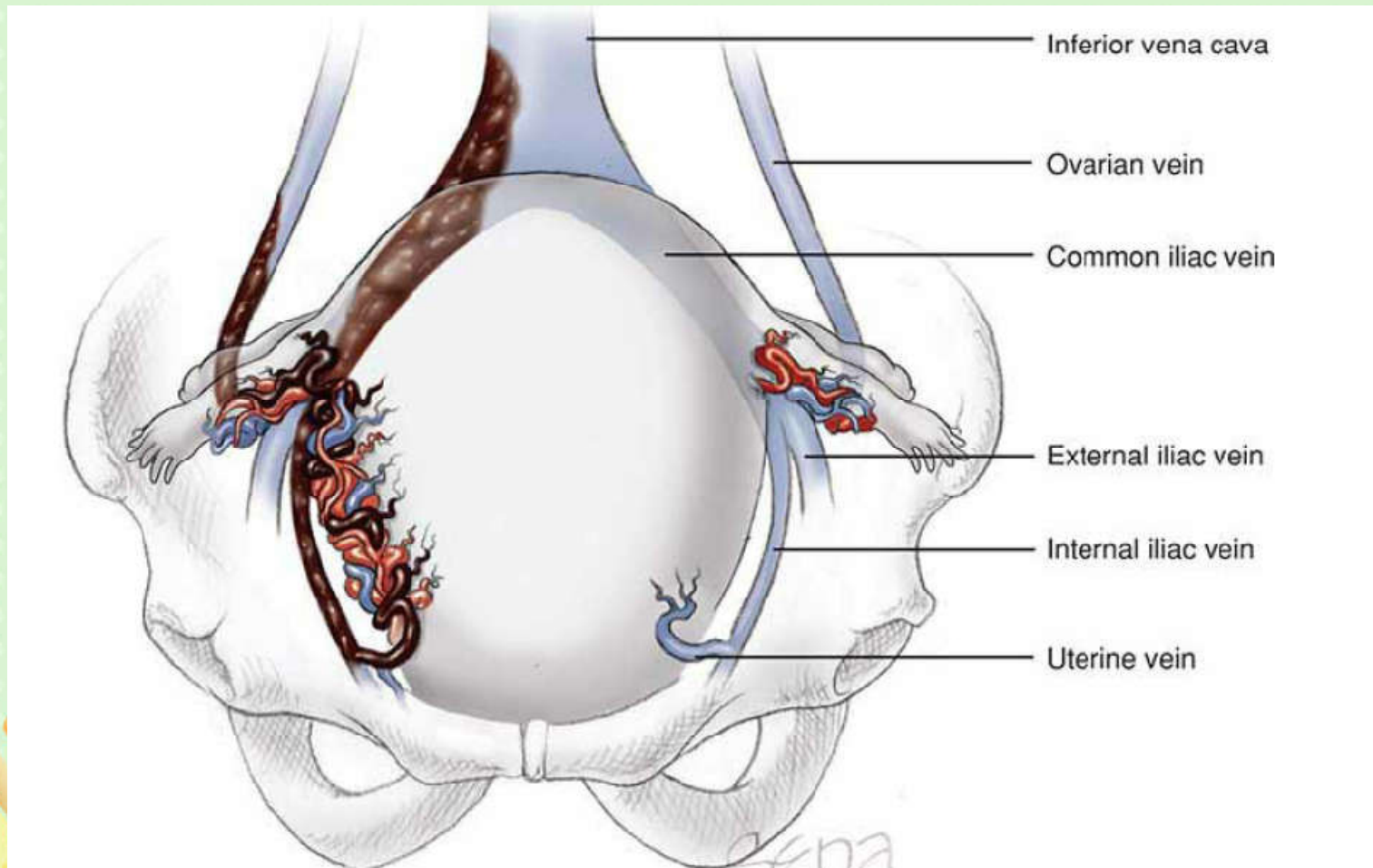
Causative Organisms



- Polymicrobial infection is usually the case with mentioned organisms; anaerobes are strongly associated with pathogenesis of metritis
- Bacterial and blood cultures are seldom needed.
- Combination of antibiotics should be started early (Azithromycin based).



Septic Thrombophlebitis



Deep Venous Thrombosis

- Venous thrombosis occurs most commonly in the superficial and deep veins of the lower extremities.
- Deep thrombi are most likely to develop in the muscles of the calf.



Antenatal assessment and management (to be assessed at booking and repeated if admitted)

Any previous VTE except a single event related to major surgery

Hospital admission

Single previous VTE related to major surgery

High-risk thrombophilia + no VTE

Medical comorbidities e.g. cancer, heart failure, active SLE, IBD or inflammatory polyarthropathy, nephrotic syndrome, type 1 DM with nephropathy, sickle cell disease, current IVU

Any surgical procedure e.g. appendicectomy

OHSS (first trimester only)

Obesity (BMI > 30 kg/m²)

Age > 35

Parity ≥ 3

Smoker

Gross varicose veins

Current pre-eclampsia

Immobility, e.g. paraplegia, PGP

Family history of unprovoked or estrogen-provoked VTE in first-degree relative

Low-risk thrombophilia

Multiple pregnancy

IVF/ART

Transient risk factors:

Dehydration/hyperemesis; current systemic infection; long-distance travel

HIGH RISK

Requires antenatal prophylaxis with LMWH

Refer to trust-nominated thrombosis in pregnancy expert/team

INTERMEDIATE RISK

Consider antenatal prophylaxis with LMWH

Four or more risk factors:
prophylaxis from first trimester

Three risk factors:
prophylaxis from 28 weeks

Fewer than
three risk
factors

LOWER RISK

Mobilisation and
avoidance of dehydration

RCOG Green top guidelines No. 37A, 2015



Management of Varicose Veins

- Avoid prolonged standing and prolonged sitting.
- Apply well-fitted below knee support stocking before ambulating in the morning.
- Ask mother to elevate her leg on pillow while taking supine lying position.

Intermittent compression.

Bandaging.

- Not to sit with leg crossed or knee flexed.



Diastasis of Recti Abdominal Muscles

- It means *separation* of the rectus abdominal muscles from med-line at linea alba. It is not hernia.
- It is *a gap* between the recti muscles 25mm(2.5 fingers)
- Palpated just *superior* to the umbilicus.
- It may occur during pregnancy after 20 weeks of pregnancy

or expulsive stage of labour due to weakness and increases tension of abdominal muscles.



Management of diastases of recti abdominal muscles

- Static abdominal exercises.
- Neuromuscular electrical stimulation
- Surgical Repair is the last resort.



- An Evaluation Exam is included to this presentation.
- I wish all of you complete the evaluation and then send it to my e mail dryahyaz@yahoo.com.
- Highlight the correct answer in yellow
 - In case you have any questions please don't hesitate to e-mail me.



- Name the answer sheet as mentioned below
- In the title of the e mail please include:
your Full Name-Puerperium-Evaluation

— Example: **Mohamed Yahya AbdelHafez-
Puerperium-Evaluation**



01007575474

TELEGRAM ACCOUNT

THANK YOU

