MINISTRY OF HEALTH OF UKRAINE
ODESA NATIONAL MEDICAL UNIVERSITY
DEPARTMENT OF OBSTETRICS AND GYNECOLOGY

CONFIRMED by
Vice-rector for scientific and
pedagogical work
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THE METHODICAL RECOMMENDATIONS FOR PRACTICAL CLASS

International Faculty, Course VI

Discipline "Obstetrics and Gynecology"

Practical lesson №30. Topic: Physiology of pregnancy, labor and postpartum period. Perinatal protection of fetus. Pharmacotherapy in obstetrics.

Approved:

Meeting of the Department of Obstetrics and Gynecology of Odesa National Medical University

Protocol No. 1 dated August 28, 2023.

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Practical lesson № 30.

The physiology of pregnancy, labor and postpartum period. Perinatal protection of fetus. Pharmacotherapy in obstetrics.

Learning objectives

The overall aim of this topic is to gain basic knowledge about anatomical, physiological and biochemical changes during pregnancy, be familiar with the physiologic adaptations associated with a normal pregnancy, be able to differentiate between certain signs and symptoms that can be common to both disease processes and to physiologic adaptations of pregnancy, obtain knowledge about methods of obstetrical examination, appropriate prenatal counseling and supervision in order to provide successful obstetric outcome, physiological changes in postpartum period, physiology of lactation and breastfeeding, primary care of newborn in order to make recommendations for management of puerperium and neonatal period and advice woman on discharge.

Basic concepts: Pelvis from anatomical and obstetric points of view. Pelvic floor. The structure of the fetal head. The dimensions of the fetal head and body. Signs of fetal maturity. Measurement and evaluation of the pelvis.

Equipment

- Multimedia equipment (computer, projector, screen), TV.
- Obstetric models and obstetric instruments (pelvimeter, obstetric stethoscope, centimeter tape).
- Professional algorithms, structural-logical schemes, tables, videos.
- Results of laboratory and instrumental researches, situational tasks, patients, medical histories.

EDUCATIONAL TIME – 4 h

I. ORGANIZATIONAL STAGE

- Greetings,
- checking attendees,

- defining of educational goals,
- providing of positive motivation.

Knowledge of the physiology of childbirth begins clinical obstetrics. Careful observance, and, if necessary - as close as possible inheritance physiological processes in childbirth is a direct and natural way to reduce maternal and perinatal morbidity and mortality. Learning the basic steps of the physiological delivery and management can learn to practice the most important methods of examination childbirth, the ability to assess the obstetric situation, the provision of appropriate care in childbirth in the light of physiological data, based on evidence based medicine. An important component of this lesson is to study the tactics of the physician in managing laboring women at all stages, eliminating maternity injuries, prevention of fetal distress and asphyxia of the newborn.

II. CONTROL OF BASIC KNOWLEDGE (written work, written testing, online testing, face-to-face interview, etc.)

2.1. Requirements for the theoretical readiness of students to perform practical classes.

Knowledge requirements:

- Communication and clinical examination skills.
- Ability to determine the list of required clinical, laboratory and instrumental studies and evaluate their results.
- Ability to make a preliminary and clinical diagnosis of the disease
- Ability to perform medical manipulations
- Ability to determine the tactics of physiological pregnancy, physiological labor and the postpartum period.
- Ability to keep medical records.

List of didactic units:

- Physiological changes in a woman's body during pregnancy
- Methods of examination of the pregnant woman,
- Principles of physiological pregnancy.
- Determination of the topography of the fetus in the uterus.
- Principles of keeping a gravidogram.
- Features of clinical course and period of confinement.
- Features of reference and the period of confinement.
- Basis of partogram.
- Features of clinical course of II stage of labor.
- Properties of II stage of labor.
- Features of clinical course of III stage of labor.
- Properties of III stage of labor.
- Primary toilet newborn.

2.2. Questions (test tasks, tasks, clinical situations) to test basic knowledge on the topic of the class.

Questions:

1. What is the normal course of pregnancy?
2. What are the main changes in organism of woman during pregnancy?
3. What are the main stages of labor?
4. Please, tell about the first stage of labor?
5. Please, tell about the second stage of labor?
6. Please, tell about the third stage of labor?

7. What is the normal course of postpartum period?

8. What are the teratogenes?

9. What are the most common drugs using during pregnancy?

10. What are the main methods of assessment of fetal well-being in obstetrics?

11. What do you know about medical ethics and deontology?

Test tasks

Direction: For each of the multiple-choice questions select the lettered answer that is the one best response in each case.

1. A 19-year old prima gravida is in the gestational term of 25-26 weeks. Objective: the skin and visible mucous have usual color. ABP is 115/70 mmHg, pulse is 108 beats/min, does not vary during her sleeping, functional systolic murmur is auscultated. Borders of the heart are not modified, in ECG there is a vertical position of electrical axis of heart, sinus tachycardia, slight hypertrophy of the myocardium of the left ventricle. Clinical analysis of the blood and urine are without pathological variations. What is the most probable cause of the condition of pregnant women?

A. *Adaptation to pregnancy

B. Aquired heart disease.

C. Active phase of the rheumatic process.

D. Congenital heart disease.

E. Disease of the thyroid gland.

2. A 19-year-old primigravida with unsure LMP presents to initiate prenatal care. You attempt to estimate gestational age. The uterine fundus is palpable at the level

of the pubic symphysis, and fetal heart tones are audible by electronic Doppler. On the basis of this information, what is the approximate gestational age?

A. *12 weeks

B. 8 weeks

C. 16 weeks

D. 20 weeks

E. 24 weeks

3. A 20-year-old parturient woman is in the I labor stage. The pregnancy is full-term. Contractions occur every 3 minutes and last for 55 seconds. Fetus presentation is cephalic, the head is pressed to the pelvic inlet. Heart rate of the fetus is 150/min, distinct and rhythmic. Vaginal examination: cervix is fully effaced and 2 cm open; amniotic sac is intact; moderate mucous-bloody discharge is observed. What phase of the I labor stage is it?

A. *Latent

B. Active

C. Slowing-down

D. Physiological preliminary period

E. Primary uterine inertia

4. A 20-year-old woman, gravida 2, para 1 has been in labor for 4 hours. Her condition is satisfactory. Moderately painful contractions occur every 3 minutes and last for 35-40 seconds. The fetus is in longitudinal position. Fetal heartbeats are 136/min., clear and rhytmic. Fetal head is engaged into pelvic inlet. Vaginal examination revealed fully effaced and 6 cm open cervix, amniotic sac is intact, sagittal suture is in the left oblique diameter, occipital fontanel is on the right near the symphysis pubis. What stage of the labor is it?

A. *Active phase of the first stage of normal labor

B. Latent phase of the first stage of normal labor

C. The second stage of normal labor

D. Precursors of childbirth

E. Preliminary stage

5. A 23-year-old primigravida at 39 weeks gestation has been admitted to the maternity ward with irregular painless contractions. The intensity of uterine contractions is not changing and weak, the intervals between them stay long. Bimanual examination reveals that the cervix is centered, soft, up to 1,5 cm long. There is no cervical dilatation. What diagnosis should be made?

A. Pregnancy I, 39 weeks, labor I, 1 period, the latent phase

B. Pregnancy I, 39 weeks, labor I, period 1, the active phase

C. Pregnancy I, 39 weeks, birth I, 1 period, the acceleration phase

D. Pregnancy I, 39 weeks, pathological preliminary period

E. *Pregnancy I, 39 weeks, preliminary period

6. A 24-year-old primipara was hospitalized with complaints of leakage of fluid. On exam there are no uterine contractions. Baby is in longitudinal lie, head is pressed to the pelvic inlet. Fetal heart rate is rhythmical, 140 bpm, auscultated on the left below the navel. Internal examination: cervix of the uterus is 2,5 cm long, dense, the external os is closed, clear amniotic waters are discharged. Point out the correct component of the diagnosis:

A. *Prelabor rupture of the amniotic membranes

B. Early rupture of the amniotic membranes

C. The beginning of the 1st stage of labour

D. The end of the 1st stage of labour

E. Pathological preterm labour

7. A 25-year old prima gravida the first day of the last menstruation: 03.03.2018. Fetal movements: 02.08.2018. Determine the estimated date of delivery:

A. *10 December

B. 10 November

C. 10 January

D. 30 December

E. 30 January

8. A 29-year-old primigravida at 36 weeks' gestation complains of dizziness and nausea when reclining to read in bed before retiring at night. Suspecting that her symptoms are the result of normal physiologic changes of pregnancy, you recommend which of the following?

A. improved room lighting

B. *rolling toward the right or left hip while reading

C. mild exercise before retiring to bed

D. elevation of both her feet while lying in bed

E. small late night snack

9. A 32-year-old gravida complains of episodes of unconsciousness, spontaneous syncopes that are quickly over after a change of body position. A syncope can be accompanied by quickly elapsing bradycardia. There are no other complications of gestation. What is the most likely reason for such condition?

A. Pressure falling in the veins of extremities

B. Pressure rising in the veins of extremities

C. *Supine hypotensive syndrome

D. Vegetative-vascular dystonia (cardiac type)

E. Psychosomatic disorders

10. A 32-year-old pregnant woman at the term of 5-6 weeks was vaccinated against influenza along with her whole family. At that time she was not aware of her pregnancy. The woman needs an advice from the family doctor regarding the maintenance of her pregnancy, namely whether there is a risk of fetal malformations because of received vaccination.What advice should the doctor give in this case?

A. *Vaccination against influenza is safe during pregnancy

B. Therapeutic abortion is recommended

C. Immediate ultrasound of the lesser pelvis is necessary

D. Test for antibodies against influenza virus is necessary

E. An infectious diseases specialist must be consulted

Typical situations of tasks:

1. A parturient woman is 27year old, it was her second labour, delivery was at full-term, normal course. On the 3rd day of postpartum period body temperature is 36, 8oC, heart rate - 72/min, BP - 120/80 mm Hg. Mammary glands are moderately swollen, nipples are clean. Abdomen is soft and painless. Fundus of uterus is 3 fingers below the umbilicus. Lochia are bloody, moderate. What is the most probable diagnosis?

Answer: Physiological course of postpartum period

2. A patient presents to your clinic complaining of nausea and vomiting. She is currently ingesting combined oral contraceptive pills (OCP) and has used them for over a year. When you tell her she has a positive pregnancy test, she reports that her last bleeding on the OCPs was 8 weeks ago. In such a situation, determination of the most accurate estimated date of delivery can then be made by which of the following?

Answer: obtaining fetal biometry by ultrasound prior to 20 weeks' gestation

3. A patient, 22 years old, has visited the maternity hospital with complaints of delay of menses for 2 months, appeared attraction to a spicy food, nausea, sleepiness, aversion for a tobacco smoke. At bimanual exam: hyperanteflexion of the uterus and enlarged according to a goose egg sizes, in the area of the left angle - asymmetry. What are the probable simptoms of pregnancy?

Answer: Delay of menses, hyperanteflexion and asymmetry of the uterus

III. FORMATION OF PROFESSIONAL SKILLS (mastering skills, conducting curation, determining the treatment regimen, conducting a laboratory study, etc.).

3.1. Content of tasks (tasks, clinical situations, etc.).

Interactive task:

Student groups are divided into 3 subgroups of 3-4 people each. They work in the classroom, maternity ward, maternity ward, neonatal unit with pregnant women and newborns.

Task:

- Subgroup I - to determine the assessment of the newborn on the Apgar scale

- Subgroup II - to determine the assessment of fetal heart rate (auscultation and hardware methods).

- Subgroup III - to assess the responses of subgroups I and II and make adjustments.

Atypical situations of tasks:

1. A 22-year-old primigravida is seen in your office at 28 weeks' gestation for a routine prenatal visit. Her pregnancy has been uneventful to date. She expresses her concern about several moles on her back, which have been enlarging over the past several weeks and for increasing difficulty with constipation. She also relates less energy to complete her job-related responsibilities at work and feels it may be related to the 18-lb weight gain she has experienced since becoming pregnant. She also has noted some gradual shortness of breath over the past 4 to 6 weeks

especially when she climbs the three flights of stairs to her office at work. She wears contact lenses and relates that her visual acuity is not as good as before she became pregnant.

Physical examination reveals her height to be 162 cm, her weight to be 68 kg, and her blood pressure to be 90/60 mm Hg. She has several pigmented nevi over her shoulders and back. She has a darkened line on her skin from her xiphoid process to her symphysis. Examination of her heart reveals a 2/6 systolic ejection murmur heard best over the second left intercostal space. Her lungs are clear to auscultation and percussion.

Abdominal examination reveals a 28 cm fundal height with normal bowel sounds, and she has trace pretibial pitting edema. Laboratory values reveal a hemoglobin level of 120 g/L and a platelet count of 125000/mm3. Urinalysis reveals no nitrites or leukocyte esterase, 2+ glucose, and no albuminuria. Fasting glucose level was 4,2 mmol/L.

1.Does this patient have any metabolic or physiologic changes not associated with a normal pregnancy?

2.What is your next step in her evaluation?

Answer

1.Metabolic or physiologic changes not associated with a normal pregnancy: No, all the symptoms, signs, and laboratory values are consistent with the physiologic adaptations of pregnancy.

2.Next step in evaluation: The following are indicated in this patient: (1) Careful dermatological evaluation of her pigmented nevi to rule out the presence of malignant melanoma. (2) Thyroid function studies should be drawn to evaluate her “lack of energy,” and (3) This patient should be advised to report any worsening of her shortness of breath.

2. A 25 years old primipara was seen by her GP at 12 weeks’ gestation. The only history of note was that her father had suffered a long-standing psychiatric illness

that the woman believed to be ‘schizophrenia’. He had died when she was young in a road traffic accident. Her pregnancy proceeded without complication, and she went home on the second postnatal day following a normal delivery at term. Within a couple of weeks, her partner reported to the community midwife that he had concerns about her mood. She seemed agitated, fearful and unduly concerned about the wellbeing of the baby and refused any help offered by him. The GP saw her and diagnosed ‘postnatal depression’. He commenced tricyclic antidepressants. However, 1 week later she became frankly delusional and believed that her partner was trying to kill the baby. She was hardly sleeping and eating very little, but was continuing to breastfeed her baby.

1.What is the most likely diagnosis?

2.How should this be managed?

3.How should her breastfeeding be managed?

4.In retrospect, how should the pregnancy have been managed?

Answer

1.The most likely diagnosis is puerperal psychosis.

2.She should be admitted to a regional mother-and-baby unit with her newborn where she can receive multidisciplinary care from the specialist medical, nursing and midwifery staff. The antidepressants should be stopped and she should be treated with antipsychotics.

3.She should be encouraged to continue breastfeeding but the baby should be monitored for side-effects.

4.Ideally, the woman should have been asked to explore the nature of her family history. This would have revealed that her father suffered from schizophrenia. If this had been known, then it could have prompted review by a specialist in perinatal mental health, leading to regular postnatal review by a psychiatric nurse being organized. This might have led to earlier intervention and prevented her deterioration to such a severe state.

3. An 18-year-old woman with a body mass index of 35 who had a forceps delivery after a prolonged second stage of labor 10 days previously presented with heavy, fresh vaginal bleeding and clots. She felt unwell and complained of abdominal cramps. On examination she had a temperature of 38.2°C and there was mild suprapubic tenderness. Vaginal examination revealed blood clots, but no products of conception. The cervix admitted one finger and the uterus was tender and measured 16 weeks in size. A review of the delivery notes revealed that the placenta was delivered complete, but the membranes were noted to be ragged.

1.What is the most likely diagnosis?

2.What are the key features that suggest retained products of conception?

3.How should the patient be managed?

Answer

1.Secondary PPH due to infected retained products of conception.

2.Secondary postpartum haemorrhage. Enlarged uterus. Open cervical os.

3.Blood cultures. Intravenous broad-spectrum antibiotics (e.g. cephalosporin and metronidazole). Surgical evacuation of the retained products.

Atypical test tasks:

1. A patient, 27 years old, has visited the maternity hospital with complaints of delay of menses for 5 months, sleepiness, increase the abdomen. General condition of the patient is satisfactory. Extragenital diseases are absent. The fundus of the uterus is soft, painless during palpation and situated near the umbilicus. Fetal movements feel good. What are the absolute simptoms of pregnancy described in the case?

A. *Fetal movements

B. Delay of menses

C. Sleepiness

D. Increase the abdomen

E. Increase the uterus

2. A primagravida comes for the next prenatal visit on 28.05.2020. The day before she felt the fetus movements for the first time. Last menstruation was on 10.01.2020. Calculate expected date of labor.

A. *17 Oktober

B. 25 July

C. 22 August

D. 11 July

E. 5 September

3. A primigravida, addressed to a gynaecologist for consultation. Hemodynamic is stable. Tongue is clean, damp. Skin and visible mucous membranes are pale-pink. Abdomen is soft, painless during palpation. During the vaginal examination: external genitals are developed properly, with no visible signs of inflammation. The cervix has a conical shape, length about 3 cm, the epithelium is intact, clean and external os is closed. The body of the uterus is in anteflexio-versio, enlarged to the size of 8 week pregnancy, the isthmus is soft. The uterine appendages on both sides are not enlarged, painless. Vaults of the vagina are free. Discharge is mucous. What is the most possible diagnosis?

A. *8 weeks

B. 10 weeks

C. 12 weeks

D. 14 weeks

E. 16 weeks

4. A Primipara overall length of labor is 10 hours and 15 minutes. She gave birth to alive mature baby girl weighing 3200 g, length 51 cm. The skin of a newborn is pink, cyanotic hands and feet, shouting loud, adequate breaths, reflexes alive, active movements. The heartbeat: 130 b.p.m., rhythmical. After 5 minutes, has turned pink of the extremities skin, were sucking motions, the child is attached to his chest.However, neonatologists appreciate newborn Apgar score:

A. 7 - 8 points

B. *9 - 10 points.

C. 9 - 9 points.

D. 8 - 9 points.

E. 6 - 7 points.

5. A primipara woman has just delivered a baby, weight 3200 g, length 50 cm. The umbilical cord was cut after cessation of pulsation. When the edge of the palm is pressed above the symphysis, the umbilical cord retreats into the vagina. What sign is used for determining whether the placenta has separated from the uterus?

A. Dovjenko

B. Rogovina

C. *Kustner-Chukalova

D. Alfelda

E. Schröeder

6. A puerperant is 28 years old. It’s the 3rd day post-partum after a second, normal, term delivery. The body temperature is of 36, 8oC, Ps- 72/min, AP- 120/80 mm Hg. Mammary glands are moderately engorged, the nipples are clean. Abdomen is soft, painless. The fundus is 3 fingers’ breadth below the navel. Moderate bloody lochia are present. What diagnosis can be made?

A. Postpartum metroendometritis

B. Remains of placental tissue after childbirth

C. Lactostasis

D. *Physiological course of the postpartum period

E. Subinvolution of uterus

7. A Secundipara has been in childbirth for 8 hours. Clear amniotic fluid was discharged. The fetal position is longitudinal, the fetal head is not determined over the plane of the pelvic inlet . Auscultated over the pubis fetal heartbeat is clear, rhythmical, 140 b.p.m. . Internal obstetrical examination: the cervix is smooth, fully opened, the amniotic membranes are absent. The sacral fovea is completely filled with the fetus's head. Spina ischiadica is not reacheable. The sagittal suture is in the direct diameter of the pelvis. The large fontanel is turned to the pubis. Contractions have begun. What period of birth is being described?

A. *Beginning of the II period

B. I period.

C. End of the I period.

D. End of the II period.

E. Beginning of the III period.

8. A Secundipara was admitted to the hospital at 18 weeks of gestation with complaints about recurrent pulling pain in the abdomen and in the lumbar region, dark bloody discharge from vagina, nausea, weakness. Vaginal examination: uterus is increased up to 12 weeks of pregnancy size. There is no fetal cardiac activity visualized by ultrasound. What is the most likely diagnosis?

A. Inevitable abortion

B. incomplete abortion

C. Complete abortion

D. *missed abortion

E. Threatened abortion

9. A Secundipara was admitted to the maternity hospital in 6 hours after the beginning of labour. Contractions last 30-35 seconds, occur every 4 minutes, with satisfaiA Secundipara was delivered to the maternity hospital in 6 hours after the beginning of labour. Contractions last 30-35 seconds, occur every 4 minutes, with satisfactory force. BP is 120/80 mm hg. Pulse is 80 b.p.m., rhythmical, of satisfactory properties. The fetal heart beat is 146 b.p.m. The fetal position is longitudinal, head presentation, I position, anterior type of position. The small segment of the fetal head is in the plane of the pelvic inlet. The contraction ring is 5 cm over the pubis. When the internal obstetrical examination should be performed?ng force. BP is 120/80 mm hg. Pulse is 80 b.p.m., rhythmical, of satisfactory properties. The fetal heart beat is 146 b.p.m. The fetal position is longitudinal, head presentation, I position, anterior type of position. The small segment of the fetal head is in the plan of the pelvic inlet. The contraction ring is 5 cm over the pubis. When should internal obstetrical examination be performed?

A. *on admission and after rupture of amniotic membrane.

B. Every 2 hours.

C. At the beginning of the II period of birth.

D. When transferred to the postnatal unit.

E. At the end of the I period of birth.

10. A Secundipara with a body weight 80 kg. What is the acceptable amount of blood loss, ml:

A. *400.

B. 500.

C. 600.

D. 700.

E. 800.

3.2. Educational materials, recommendations (instructions) for performing tasks

Normal birth criteria:

Aspect	Consideration

Includes	• Occurs between 37+0 and 42+0 weeks gestational age
	• Spontaneous onset
	• Normal labour progress
	• Vertex
	• Spontaneous vaginal birth
	• Intermittent fetal auscultation
	• Nitrous oxide and oxygen
	• Third stage management:
	  o Physiological third stage
	  o Modified active third stage (delayed cord clamping)
	• No maternal or fetal complications or risk factors

Excludes	• Induction of labour
	• Augmentation:
	  o ARM
	  o Oxytocin infusion
	• Continuous fetal monitoring
	• Pharmacological pain relief that

	includes: o Opioids o Epidural or spinal o General anaesthetic • Instrumental birth (forceps or vacuum) • CS • Episiotomy • Early cord clamping • Complications: o Risk factors at commencement of labour o Intrapartum o Immediate postnatal (within two hours of birth)

STAGES OF LABOR:

Labor Stage	**Definition**	**Function**	**Duration**
Stage 1—Latent phase **Effacement**	Begins:onset of regular uterine contractions Ends: acceleration of cervical dilation	Prepares cervix for dilation	<20 hours in primipara <14 hours in multipara
Stage 1—Active phase **Dilation**	Begins: acceleration of cervical dilation Ends: 10 cm	Rapid cervical dilation	≥0.7cm/hours primipara

	(complete)		≥1.0 cm/hours multipara
Stage 2 Descent	Begins: 10 cm (complete) Ends: delivery of baby	Descent of the fetus	<3 hours in primipara <2 hours in multipara Add 1hour If epidural
Stage 3 Expulsion	Begins: delivery of baby Ends:delivery of placenta	Delivery of placenta	<30 minutes

Diagnosis of fetal presentation and position

1. Abdominal palpation – Leopold maneuvers (4)
2. Vaginal examination
3. Auscultation
4. Ultrasonography and radiography

Leopold maneuvers:

First maneuver

- palms are placed at the uterine fundus
- permits identification of which fetal pole –breech or head –occupies the uterine fundus

Second maneuver

- palms are placed on either side of the maternal abdomen
- gentle but deep pressure
- on one side a hard, resistant structure – the back (convex shape)
- on the other, numerous small, irregular, mobile parts – fetal extremities

Third maneuver

- using the thumb and fingers of the right hand, the lower portion of the maternal abdomen is grasped just above the symphysis
- movable mass – the presenting part is not engaged
- differentation between head and breech

Fourth maneuver

- the examiner faces the mother's feet
- with the tips of the fingers of each hand, exerts deep pressure in the direction of the axis of the pelvic inlet.

Vaginal examination

- Before labor vaginal examination is often inconclusive
- With the onset of labor, after cervical dilatation, vertex presentation and their positions are recognized by palpation of the various sutures and fontanels.
- Face and breech presentation can be identified by palpation.
- It is advisable to pursue a definite routine, comprising
- four movements:

1. Two fingers are introduced into the vagina and carried up to presenting part. The differentiation of vertex, face, and breech is then accomplished readily.

2. If the vertex is presenting, the fingers are directed into the posterior aspect of vagina. The fingers are then swept forward over the fetal head toward the maternal symphysis. During this

movement, the fingers necessarily cross the fetal sagittal suture and its course is delineated.

3. The positions of the two fontanels then are ascertained. The fingers are passed to the most anterior extension of the sagittal suture, and the fontanel encountered there is examined and

identified. Then the fingers pass along the suture to the other end of the head until the other fontanel is felt and differentiated.

4. The station (the extent which the presenting part has descended) can also be established at this time.

Auscultation

- The region of the maternal abdomen in which fetal heart sounds are most clearly heard varies according to the presentation and the extent to which the presenting part has descended.
- Auscultatory findings sometimes reinforce results obtained by palpation

Management of normal labor and delivery

Management of the first stage of labor (in the hospital, after admission)

- Monitoring of the fetal well-being (CTG, amnioscopy)
- Uterine contractions (by hand and/or by CTG)
    - Evaluate the frequency, duration, and intensity
- Maternal vital signs (BP, P, urine, breathing)
- Subsequent vaginal examinations
- Oral intake
    - Food should be withheld
- Intravenous fluids (not necessary in all cases)

- Maternal position during labor (lying, walking, sitting, use of ball)
- Analgesia (intramuscular and/or epidural)
- Amniotomy
    - More rapid labor
    - Earlier detection of meconium-stained amniotic fluid
    - Applying electrode to the fetus, insert pressure catheter
- Urinary bladder function

Management of the second stage of labor

Maternal expulsive efforts

- Taking a deep breath as soon as the next uterine contraction begins, and with her breath held, to exert downward pressure exactly as though she were straining at stool.
- The fetal heart rate is likely to be slow, but should recover to normal range before the next expulsive effort.
- Spontaneous delivery
- Delivery of the head
    - Crowning –encirclement of the largest head diameter by the
    - vulvar ring.
    - Episiotomy
    - Ritgen maneuver
    - Controlled delivery of the head
- Delivery of the shoulders
    - External rotation – bisacromial diameter has rotated into the anteroposterior diameter of the pelvis
    - Gentle downward traction of the head

- The rest of the body almost always follows the shoulders

- Clearing the nasopharynx
- Nuchal cord
- Clamping the cord

Management of the third stage of labor

- The cervix and vagina should be immediately inspected for lacerations and surgical repair performed if necessary!
- Duration: 0 – 30 min

Signs of placental separation

1. The uterus becomes globular and firmer
2. There is often a sudden gush of blood
3. The placenta passing down into the lower uterine segment,

1. where its bulk pushes the uterus upward

4. The umbilical cord protrudes further out of the vagina

Delivery of the placenta

1. Traction on the umbilical cord must not be used to pull the
2. placenta out of the uterus
3. Manual removal of the placenta
4. Active management of the third stage
5. Oxytocin
6. Controlled cord traction

From the delivery of the placenta to stabilisation of the patient's condition, usually at about 2-6 hours postpartum

- The hour immediately following delivery is critical
- Uterine atony is more likely

- Checking of the birth-canal all the way
- Suturing the wound (internal and external lesions)
- RDV at the end of the suture

Postpartum period. Is the interval between the birth of the newborn and the return of the reproductive organs to their normal nonpregnant state It lasts for 6 weeks, with some variation among women.

Anatomic and physiologic changes.

Reproductive system: Uterus

- Involution is the return of the uterus to a nonpregnant state after childbirth
- Involution process begins immediately after expulsion of the placenta with contraction of uterine smooth muscles
- At the end of third stage of labor, the uterus is in the midline, about 2cm below the level of the umbilicus and weighs 1000g
- By 24 hours postpartum the uterus is about the same size it was at 20 gestational weeks
- The fundus descends about 1 to 2cm every 24 hours, and by the sixth postpartum day it is located halfway between the symphysis pubis and the umbilicus.
- The uterus lies in the true pelvis within 2 weeks after childbirth.
- It involutes to about 500g by 1 week after birth, 350g by 2 weeks, and at 6 weeks it has returned to its nonpregnant size 50-60g

Lochia: These are superficial layers of the endometrial decidua that are shed through the vagina during the first three postpartum weeks.

- For the first few days the color is red (lochia rubra),
- changing during the next week to pinkish (lochia serosa),
- ending with a whitish color (lochia alba) by the end of the second week.

1. **lochia rubra:**-it consists of blood, decidual and trophoplastic debris It lasts 3-4 days after childbirth.
2. **lochia serosa:**-it consists of old blood, serum, leukocytes, and tissue debris. the flow becomes pink or brown. It is expelled 3-10 days postpartum
3. **lochia alba:**-it consists of leukocytes, decidua, epithelial cells, mucus, and bacteria. it is yellow to white in color. - drain for up to and beyond 6 weeks after childbirth. The amount of lochia is usually increases with ambulation, and breastfeeding.

Cramping: The myometrial contractions after delivery constrict the uterine venous sinuses, thus preventing hemorrhage.These lower midline cramps may be painful and are managed with mild analgesics.

Perineal Pain: Discomfort from an episiotomy or perineal lacerations can be minimized in the first 24 hours with ice packs to decrease the inflammatory response edema.

Constipation: Decreased GI tract motility because of perineal pain and fluid mobilization, can lead to constipation.Management is oral hydration and stool softeners.

Hemorrhoids: Prolonged second-stage pushing efforts can exaggerate preexisting hemorrhoids. Management is oral hydration and stool softener

Hypotonic Bladder: Intrapartum bladder trauma can result in increased post-void residual volumes. If the residuals exceed 250 mL, the detrusor muscle can be stimulated to contract with bethanechol (Urecholine). Occasionally an indwelling Foley catheter may need to be placed for a few days.

Dysuria: Pain with urination may be seen from urethral irritation from frequent intrapartum catheterizations. Conservative management may be all that is necessary. A urinary analgesic may be required occasionally.

Bonding: Impaired maternal–infant bonding is seen in the first few days postdelivery. Lack of interest or emotions for the newborn is noted. Risk is increased if contact with the baby is limited because of neonatal intensive care, as well as poor social support. Management is psychosocial evaluation and support.

Blues: Postpartum blues are very common within the first few weeks of delivery. Mood swings and tearfulness occur. Normal physical activity continues and care of self and baby is seen. Management is conservative with social support.

Depression: Postpartum depression is common but is frequently delayed up to a month after delivery. Feelings of despair and hopelessness occur. The patient often does not get out of bed with care of self and baby neglected. Management includes psychotherapy and antidepressants.

Psychosis: Postpartum psychosis is rare, developing within the first few weeks after delivery. Loss of reality and hallucinations occur. Behavior may be bizarre. Management requires hospitalization, antipsychotic medication, and psychotherapy.

3.3. Requirements for the results of work.

- To perform an fetal heart tones auscultation.
- To prescribe an adequate treatment of fetal hypoxia.
- Ultrasonography assessment.
- To evaluate of fetal heart tones during electronic fetal monitoring.

3.4. Control materials for the final stage of the class: tasks, tests, etc.

1. A secundipara, 32 weeks, arrived at the maternity hospital. The uterus is in normal tone and increased in size according to gestational age. Where should be the fundus of the uterus?

A. near the navel

B. 4 cm below the xiphoid process

C. near the xiphoid process

D. near the pubis

E. *in the middle distance between xyphoid process and the navel

2. A secundipara, 35 years old, comes for routine prenatal visit. During palpation of the uterus, a smooth, dense and round part with definite outlines is palpated over the pelvic inlet. A broad, soft fetal part is palpated at the right subcostal area; the fetal back is turned to the left and posterior in relation to the uterus wall. Fetal heartbeat is clear, rhythmical 142 bpm., in the left area below the umbilicus. Please, establish the diagnosis:

A. *Left occipitoposterior position

B. Left occipitoanterior position

C. Right occipitoanterior position

D. Right occipitoposterior position

E. Frank (incomplete) breech presentation

3. A woman 25 y.o., on 7th day of postpartum period. The general condition is satisfactory, no complaints. The body temperature is 36,6 oC, pulse is 76 b.p.m, satisfactory properties. BP 120/80 mmHg. Mammary glands are soft, painless, nipples goals. The uterus is firm, painless, its fundus is 2 cm above the pubis. Lochia are serous - blood, moderate. Physiological functions are normal. Which pituitary hormone stimulates uterine contractions?

A. Folikulin.

B. Progesterone.

C. Chorionic gonadotropin.

D. *Oxytocin.

E. Prolactin.

4. A woman 26 y.o. on the third day after birth had abandoned breastfeeding and became indifferent to all the surrounding. She has tried to escape the hospital without a child twice. Pregnancy was unwanted. Woman's facial expressions were mournful, slow movements and speech, loss of appetite. What is the main direction of therapy?

A. Lobectomy.

B. Cytostatics.

C. Hormonal therapy.

D. *Psychotherapy.

E. Antibacterial therapy.

5. A woman with blood group B(III) Rh(+) gave birth to a full-term healthy boy. Examination on the 3rd day of the infant's life shows him to have icteric colour of his skin. The child has no problems with suckling, sleep is not disturbed. The abdomen is soft, the liver protrudes by 2 cm from under the costal margin. Complete blood count: hemoglobin -200 g/L, erythrocytes - 5.5 · 1012/L, total bilirubin – 62 mcmol/L, indirect bilirubin – 52 mcmol/L. What condition can be suspected?

A. Congenital hepatitis

B. Hemolytic disease of the newborn due to Rh incompatibility

C. *Physiologic jaundice

D. Biliary atresia

E. Hemolytic disease of the newborn due to ABO incompatibility

6. A woman, 27 y.o, on 3d day postpartum, there has been noticed a significant breast engorgement. In this regard it should recommend:

A. *Continue breastfeeding on demand.

B. Pumping breast.

C. Cancellation of breastfeeding.

D. Warming a compress on the breast.

E. Cancel use bra.

7. A woman, 34 weeks of pregnancy at her visit to the maternity hospital, height is 175 cm, weight is 74 kg. She has no complaints. The circumference of the wrist joint is 16 cm. Sizes of the pelvis: 25-28-31-21 cm. The fundal height is 35 cm, the circumference of the abdomen is 90 cm. Determine the estimated fetal weight in g:

A. *3150 ± 200 g.

B. 2500 ± 200 g.

C. 4100 ± 200 g.

D. 1850 ± 200 g.

E. 2850 ± 200 g.

8. At the end of the first day of postpartum period the Uterine cervix internal orifice :

A. Passes 8-9 cm

B. Passes 1-2 cm.

C. Closed.

D. *Passes 3-4 cm fingers

E. None of the above.

9. At what pregnancy term is it necessary to conduct the first ultrasound screening of the fetus?

A. *11 weeks -13 weeks + 6 days

B. 8 – 9 weeks

C. 9 – 10 weeks

D. 10 – 11 weeks

E. 18 – 21 weeks

10. During a pregnant woman examination at the female consultation center, the doctor found out enlarged uterus according to size of 5-6 weeks of pregnancy, in the left angle of the uterus a protrusion is palpated. The uterus has soft consistence, but during examination has rendered firm. After seizing the pressure, the uterus became soft again. What signs of pregnancy were found out by the doctor?

A. *Snegiryov and Genter's

B. Piskacek and Snegiryov's.

C. Gorvits - Hegar's.

D. Genter and Piskacek's.

E. Gubarev and Gauss'.

11. During examination of the patient in the women's clinic, the doctor discovered that the uterus size is increased up to 5-6 weeks of pregnancy, in the left corner of the uterus is palpable protrusion. Uterus is soft, but during the study it is becaming hard and then again become soft. What is the most likely diagnosis?

A. Inevitable abortion

B. Uterine fibroids

C. Ectopic Pregnancy

D. *The uterine pregnancy

E. Threatened abortion

12. During normal pregnancy a lowered hemoglobin is a physiologic finding. What is its major cause?

A. blood lost to the placenta and fetus

B. low iron stores

C. increased cardiac output resulting in greater red-cell destruction

D. decreased reticulocytosis

E. *increased plasma volume

13. During pregnancy, blood tests for diabetes are more apt to be abnormal than in the nonpregnant state. Also, nondiabetic women may develop gestational diabetes during the last half of the pregnancy. This is due in part to which of the following?

A. *increased placental lactogen

B. increased food absorption from the GI tract

C. decreased insulin production

D. decreased hepatic secretion of insulin-binding globulin

E. hemoconcentration

IV. SUMMING UP

Current control: oral examination, testing, assessment of practical skills, solving situational clinical problems, assessment of activity in the classroom.

Criteria for current assessment on the practical lesson:

5	The student is fluent in the material, takes an active part in the discussion and solution of situational clinical problems, confidently demonstrates practical skills during the examination of a pregnant and interpretation of clinical, laboratory and instrumental studies, expresses his opinion on the topic, demonstrates clinical thinking.
4	The student is well versed in the material, participates in the discussion and solution of situational clinical problems, demonstrates practical skills during the examination of a pregnant and interpretation of clinical, laboratory and instrumental studies with some errors, expresses his opinion on the topic, demonstrates clinical thinking.

3	The student isn't well versed in material, insecurely participates in the discussion and solution of a situational clinical problem, demonstrates practical skills during the examination of a pregnant and interpretation of clinical, laboratory and instrumental studies with significant errors.
2	The student isn't versed in material at all, does not participate in the discussion and solution of the situational clinical problem, does not demonstrate practical skills during the examination of a pregnant and the interpretation of clinical, laboratory and instrumental studies.

IV. METHODICAL SUPPORT MATERIALS

1. Zaporozhan V.M., Mishchenko V.P. Obstetrics and gynaecology in 2 Books : Book 1 : Obstetrics, 2007. – 373 pp.

2. Collins S, Arulkumaran S, Hayes K. Oxford Handbook of Obstetrics and Gynaecology, 2013.-p. 22-48, 263-326.

3. Clinical Practice Guidelines: Pregnancy Care. Canberra: Australian Government Department of Health. 2018.-318 pp.

4. Obstetrics by Ten Teachers (20th ed) Louise C. Kenny, Jenny E. Myers. – CRC Press. – 2017. – PP. 583-688.

5. Kaplan. USMLE Step 2 CK Lecture Notes: Obstetrics and Gynecology. 2019.-pp. 365-454.

INTERNET SOURCES:

- https://www.cochrane.org/

- https://www.ebcog.org/
- https://www.acog.org/
- https://www.uptodate.com
- https://online.lexi.com/
- https://www.ncbi.nlm.nih.gov/
- https://pubmed.ncbi.nlm.nih.gov/
- https://www.thelancet.com/
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