Ticket N1

1. **Theoretical question: Multiple pregnancy. Classification. Pathogenesis. Possible complications. Management of labour.**
2. **Clinical case.**

A 29 years old pregnant woman came to the outpatient clinic with complaints of edema of the lower extremities, the anterior wall of the abdomen. Edema does not significantly decrease after a night's rest.

Anamnesis data. Menstrual periods started from the age of 13, established immediately for 3-4 days with an interval of 27-28 days, painless. The first day of the last menstrual period was 02.10.2019 (October, 2).

Sex life since the age of 22, she is married.

This pregnancy is the 2nd. The gestational age is 33 weeks. The first pregnancy terminated by normal birth four years ago. The child is alive.

Two weeks ago, she noticed edema on her legs.

Examination data. The height-170 cm, body weight-86 kg. There are significant edema on the legs, external genitals, anterior abdominal wall. Body temperature-36.6 °C, pulse -76 per min, rhythmic, blood pressure -150/80-150/85 mmHg.

The abdomen is ovoid, enlarged due to pregnancy. The bottom (fundus) of the uterus is in the middle of the distance between the xiphoid process and the navel. The position of the fetus is longitudinal, the head is movable above the entrance to the small pelvis. Fetal heartbeat is clear, rhythmic, 140 beats/min. Pelvic sizes: 25-28-31-21 cm. There is no labor activity.

The vaginal examination: the cervix is 3 cm long, deflected posteriorly, the external os passes the tip of the finger. Through the anterior arch, the head of the fetus is determined to be movable above the entrance to the small pelvis, the promontory of the sacrum is not reached.

Urine alysis: straw-yellow color, acid reaction, relative density-1012. Protein – 0.6 g/l. Microscopy of the sediment: white blood cells-2-3 in the field of view, squamous epithelial cells-single, no cylinders.

Protein content in daily urine: 2 g/l

CBC: hemoglobin -104 g/liter; red blood cells— 3,5 $*10^{12}$/l, white blood cells— 5,8 $*10^{9}$/l; leukogram-no changes; ESR — 19 mm/h.

Questions:

1. Establish and justify the diagnosis.

2. What additional methods of examination are necessary in this situation?

3. With what diseases should differential diagnosis be carried out and how?

4. What is the pathogenesis of this pregnancy complication?

5. Determine the management tactics of this patient.

3. **Practical scill: the signs of detachment of placenta (not less than 3).**

The standard of the answer

1. **Multiple pregnancy** is a pregnancy where more than one fetus develops simultaneously in the womb.

Classification.

There are two types of twins:

Terms used for multiple births or the genetic relationships of their offspring are based on the zygosity of the pregnancy:

- Monozygotic – multiple (typically two) fetuses produced by the splitting of a single zygote.
- Dizygotic – multiple (typically two) fetuses produced by two zygotes.

Multiple pregnancies are also classified by how the fetuses are surrounded by one or more placentas (chorionicity) and amniotic sacs (amnionicity): monochorionic/dichorionic and monoamniotic/diamniotic.

Pathogenesis:

Monozygotic twin pregnancy occurs:

• upon fertilization of polynucleate egg;

• upon atypical cleavage of conceptus (pre-embryo): one ovum fertilized by one sperm cell turns into two embryos (polyembryonism).

Dizygotic twin pregnancy occurs:

• upon simultaneous fertilization of two eggs that matured in one or both ovaries (several eggs can mature in one follicle) by spermatozoa from one or different males;

• upon fertilization of an egg that ovulated while there was already a pregnancy within one menstrual period (superfecundation)*;

• upon fertilization of an egg that ovulated while there was already a pregnancy during the next menstrual period (superfetation)**.

Dizygotic twins can be of one (75%) or different sex. Their genotype is not the same.

Complications:

- Vanishing twin syndrome.
- Threatening abortion and threatening premature labour.
- Anemia.
- twin-to-twin transfusion syndrome (TTTS).
- Twin anaemia polycythaemia sequences (TAPS).
- Vomiting of pregnancy.
- Preclampsia.

Management of labour.

Indications for planned elective cesarean section:

• monoamniotic twins;

• triplets or more fetuses;

• breech presentation or unfavorable lie of the first fetus (transverse, oblique).

2. **Pregnancy III, 33 weeks of gestational age. Mild preeclampsia. Mild anemia.**

Justification of the diagnosis:

Arterial hypertension (previously undiagnosed): systolic blood pressure-150 mmHg in combination with proteinuria (daily protein loss-2g / l) - diagnostic criteria for mild preeclampsia. In addition, the patient has edema of the lower extremities and the anterior abdominal wall (stage I), which is also a symptom of preeclampsia.

Mild anemia: according to the CBC data (hemoglobin 104 g / l).

2. What additional methods of examination are necessary in this situation?

• Biochemical blood test, including serum iron and ferritin

• Coagulogram

* Fetal ultrasound (fetometry+Dopplerometry)

• CTG

3. The differential diagnosis should be made with hypertension and kidney diseases (glomerulonephritis, pyelonephritis, nephroangiosclerosis). The presence of kidney disease may indicate the progression of the disease in connection with infectious diseases (angina) and the presence of signs of disease before pregnancy (increased blood pressure, hematuria, prolonged swelling) with characteristic changes in the urine (leached erythrocytes, renal epithelium, etc.).

4. The pathogenesis is based on a violation of trophoblast invasion, which entails a violation of the process of vascular remodeling. As a result, the vessels of the utero-placental complex have a smaller diameter and do not lose the muscle layer, and, therefore, the ability to constrict. Therefore, the placenta is in a state of ischemia and releases high concentrations of pro-inflammatory cytokines into the bloodstream, which, in turn, attack the vascular endothelium. As a result of vascular endothelial damage and RAS activation, systemic vasoconstriction occurs. Edema is also caused by a violation of the integrity of the vascular wall, as a result of which the fluid leaves the vessels and penetrates into the tissues.

5. prolongation of pregnancy to the term of 37 weeks. 6 days.

Necessary conditions: CTG-every 7-10 days, ultrasound (fetometry+Doppler) - every 7-10 days.

Treatment includes antihypertensive therapy. The first-line drug is Methyldopa (the average daily dose is 1 g, the maximum is 2 g). The drug is taken orally. In addition, anemia therapy is necessary –iron supplementation in tablets (for example, Ferrum lek 100 mg 2 times a day).

3. The signs of detachment of placenta.

• Kustner sign: when the sharp of the hand is pressed over the symphysis pubis, the
cord is not pulled into the genital tract;

• Alfeld sign: the detached placenta sinks to the lower uterine segment or vagina so that the ligature or clamp placed on the cord when ligating it goes down;

• Schroeder sign: change in the shape of uterus or fundal height. Immediately upon delivery of the fetus the uterus becomes oval and positions itself along the middle line. The fundus is at the navel level. After placental separation the uterus extends, shifts to the right, and the fundus rises to the right subcostal

space.
• Dovzhenko sign: retraction of the cord upon deep respiration indicates that the
placenta has not detached;
• absence of cord retraction upon inspiration indicates separation of the placenta;
• Strassman sign: oscillating motions of blood in the placenta upon tapping the
uterus are transmitted along the cord if the placenta has not detached;
• Klein sign: upon pushing or slight pressing down on the uterus the cord moves
outside and does not retract if the placenta has detached.

Ticket N2

1. **Postpartum period. Changes in the puerperal organism.**
2. **Clinical case.**
   A 22-year-old patient is admitting to the clinic complaining of severe cramping pains that occurred this morning after defecation, accompanied by fainting, dizziness, and vomiting. The last menstruation was seven weeks ago. For two weeks, she notes periodic attacks of cramping pains, accompanied by a feeling of nausea.
   From the anamnesis: Menstruation is usually regular, the duration of menstrual cycle is 28 days? The duration of periods - 3-4 days, not abundant. Not painful. Sexual activity for three years. She has a 2-year-old child.
   Objectively: The patient is of average constitution. The skin and visible mucous membranes are pale. T – 36.0. The tongue is clean and moist. The abdomen is swollen, tense, and sharply painful in the lower parts. During percussion, the percussion sound is dulled.
   Speculum examination: the mucous membrane of vulva and vagina is cyanotic. The cervix is cylindrical, the external pharynx is slightly open,
   Vaginal examination: the uterus is enlarged to the size of a 5–week pregnancy, in the correct position, of a soft consistency, painful when moving. There is a painfulness in the area of the right appendages. The posterior fornix of vagina sharply painful. The left appendages are not changed.
   Diagnosis, justification of the diagnosis, treatment.
3. **Practical scill:** Manual detachment and removal of placenta.

The standard of the answer

1. Postpartum period. Changes in the puerperal organism.

The postpartum period, also known as the puerperium, is the time after childbirth when the mother's body gradually returns to its pre-pregnancy state. During this time, various physiological and anatomical changes occur:

Classification of the Postpartum Period

The postpartum period is typically classified into 2 stages based on the time elapsed after childbirth:

1.Early postpartum period. Lasts from delivery up to 24 hours. This is the most critical phase immediately following birth, focusing on maternal stabilization and initial recovery.

2.Late postpartum period. Extends from 24 hours to 6 weeks after delivery. During this time, the body undergoes significant physical and hormonal changes, and the mother begins recovery and adaptation.

Changes in the puerperal organism.

Uterus: It shrinks from the size of a fetus to its normal size through involution, usually within 6 weeks. The uterine fundus descends daily.

Lochia: Vaginal discharge consisting of blood, mucus, and uterine tissue, which gradually decreases over weeks.

Hormonal Changes: Levels of pregnancy hormones like estrogen and progesterone drop sharply, leading to the end of pregnancy symptoms and the resumption of ovarian activity.

Reproductive Organs: The ovaries gradually resume their normal function, leading to the return of ovulation and menstruation.

Cardiovascular System: Blood volume decreases, and cardiac output returns to pre-pregnancy levels.

Breasts: They undergo changes from pregnancy-related engorgement to milk production.

Other systems: Metabolism, urinary, and gastrointestinal systems also adapt, with some women experiencing fatigue, emotional fluctuations, and physical recovery.

Overall, these changes help the body recover and restore reproductive health after childbirth.

2. The standard of the answer for the clinical case.

Preliminary diagnosis: right-sided tubal pregnancy, interrupted by the type of tubal abortion.

Justification of the diagnosis:

- Sudden sharp cramping pains;
- For two weeks, he notes periodic attacks of cramping pains, accompanied by a feeling of nausea.
- Fainting, dizziness, vomiting;
- Menstrual irregularity: cessation of periods for 2-3 weeks.

- The abdomen is swollen, tense, and sharply painful in the lower parts.
- During abdominal percussion, the percussion sound is dulled.
- The uterus is enlarged to the size of a 5–week pregnancy, painful when moving.
- There is a testiness in the area of the right appendages.
- The posterior arch is compressed, sharply painful.

Additional research methods: the patient needs to undergo an ultrasound examination, a blood test for hCG, a general blood test, a coagulogram, a biochemical blood test, and a determination of blood group and Rh-factor affiliation.
In this case, it is necessary to perform laparoscopy with a right-sided tubectomy.

3. The standard of the answer for practical scill

Manual detachment and removal of placenta.

Indications: violation of the separation of the placenta within 30 minutes after the birth of the fetus, bleeding in the 3rd stage of labour.
Algorithm of actions:
1. Catheterize the bladder
2. Wash up the external genitalia with an antiseptic solution.
3. Give anesthesia.
4. With your left hand, dilute the Labia Majora.
5. Insert the conically folded right arm into vagina and then into the uterus. At the moment of insertion of the right hand into the uterus, move the left hand to the bottom of the uterus. To avoid mistaking insert your hand along the umbilical cord.
6. Put the fingers of your right hand between the placenta and the uterine wall and gradually separate the entire placenta with sawtooth movements; at this time, the outer hand helps the inner one by gently pressing on the bottom of the uterus.
7. After separation of the placenta, it should be reduced to the lower segment of the uterus and extracted with the left hand by pulling on the umbilical cord.
8. With the right hand remaining in the uterus, carefully check the inner surface of the uterus again to completely eliminate the possibility of retention of parts of the afterbirth.
9. After a control examination of the walls, remove the hand from the uterine cavity.
10. Give the uterotonic.
11. If it is impossible to separate the placenta from the wall of the uterus, transfer the woman in labor to the operating room.