IV International Medical Tournament

Extramural round

English-speaking league

Requirements for solutions.

- The solution of each problem should be presented in the two following documents:

  1. PowerPoint (ppt or pdf) presentation: a brief solution (max ten slides)

  2. Microsoft Office document (doc or pdf): a text solution with validations and comments (max five pages, Times New Roman, 12 pt, line style 1.0).

- The files should be named: "case number" _ "team name".

- Text and presentation should not contain a team name as well as a university or city emblem in order to ensure an anonymity of the extramural round.

- For participation in the extramural round, please provide solutions for leastwise two out of the three proposed problems (according to your choice). If a team solves all three problems, the total score is calculated based on the two best solutions.

We are waiting for your solutions of the problems to our e-mail ***medtourn@gmail.com*** up to 6 February 2017.

Case №1

Woman, 30 years old.

Complains of palpable nodes within the both mammary glands. Due to the fact visited a gynecologist. According to the results of the breast ultrasound examination, the gynecologist stated a diagnosis of fibrosing adenosis of the mammary glands. A surgery was recommended. Echocardiography (ECG) was done before the surgery and showed a formation in the left ventricle of the size of 22 mm on 54 mm and a developing dynamic obstruction of the left ventricular outflow tract. Previously the patient got no medication treatment for this reason. It was recommended that the patient would be supervised by a cardiologist for prescribing a further treatment tactics.

Antecedent anamnesis revealed that the patient noted a rapid increase of body weight (more than 30 kg), a menstrual cycle disorder (oligomenorrhea) and a progressing fatigue during the last two years. According to the oral information provided by the patient, mother of the patient had a similar body weight excess and multiple spinal compression fractures. She died at the age of 57 years due to the heart problems. Multiple formations within the left atrium were found postmortem.

Objectively: general status is satisfactory, hemodynamic parameters are stable. Height 168 cm, weight 93 kg. Subcutaneous fat distribution of centripetal type. The findings include a multiple naevi, multiple dark-blue pigmented spots on the skin surface, in the visible areas of mucosal membranes and in the sclerae. Skin in the distal areas of the body presents livedo reticularis signs. Blood pressure sitting 157/94 mm Hg., standing 155/95 mm Hg., heart rate 87 beats per minute, breath rate 19 breaths per minute. Cardiac tones proportional, additional murmurs not audible, lung auscultation patter without abnormalities. Abdominal palpation soft and painless, costovertebral angle tenderness negative (oral information provided by the patient), urination and bowel movements are normal.

Clinical research: *Clinical hematology panel:* Hb 127 g/l, erythrocyte sedimentation 5 mm, WBC 10.2*10^9/l (neutrophils - 57%, lymphocytes - 29%, monocytes - 10%, eosinophils - 4%), hematocrits 39%, blood platelet 253*10^9/l.

Biochemistry panel: GPT - 26.2 U/l (0.0 - 32.0), GOT 24.4 U/l (0.0 - 31.0), potassium - 4.11 mmol/l (3.50 - 5.50), sodium 154.00 mmol/l (130.00 - 156.00), total bilirubin 7.40 µmol /l (3.40 - 20.50), glucose 6.9 mmol/l, creatinine 67.0 µmol/l.

Assignment:

1. Formulate and justify a preliminary clinical diagnosis for this patient?
2. What additional research is needed to assign the patient to clarify the diagnosis? What results do you expect to obtain?
3. State a clinical diagnosis.
4. Assign a further treatment tactics and validate it in detail.

Case №2

Girl, 1 year 5 months.

Admitted to the intensive care unit with complaints of fever, generalized skin hyperemia, facial swelling and itching skin.

Antecedent anamnesis revealed that one week ago the child received a scheduled polio-diphteria-tetanus-pertussis vaccination. Within four days after the procedure the patient felt good with no signs of abnormalities. Patient's mother gave to the child three strawberries. In one hour the child started vomiting of undigested food, fever up to 37.5–38 °C, polymorphous eruption on the face, palpebral swelling and single episode of loose stools. The patient was admitted by ambulance to the reception ward of the children's hospital. Tonsils (angor) covered with white spots were diagnosed. The reception ward doctor suspected an acute tonsillitis. "Flemoxin solutab" (Amoxycillinum) was prescribed. Further hospitalization in the infectious diseases hospital was recommended. Patient's mother abandoned child's hospitalization.

The next morning the patient's condition has severely aggravated. According to the oral information provided by the mother, skin redness has spread along the upper part of the body, facial swelling, stentorious breathing, intensive itch and scratches have appeared. The patient was examined by an ambulance doctor. Immediate hospitalization to the intensive care unit was recommended.

Patient anamnesis: timely delivery, breast-fed, supplementary food since the age of 5 months. Up to the present moment two episodes of acute respiratory infections with no complications. Two months ago the patient had an episode of slight cheek hyperemia after taking garden current berries (not treated).

Family anamnesis: patient's mother has a grass pollen allergy (her occupation is in the medical sphere). Father is healthy. No other children in the family.

Objective data was collected within the intensive care unit. General status is severe, the patient is conscious, constantly crying, stentorious breathing. All the body surface is covered with exudative erythema multiforme accompanied with itching, scratching. The face is edematous with the swelling intensity, especially severe in the lips and eyelids. Skin palpation revealed a pain sensation in the healthy skin and in the area of lesions. Nikolsky's sign negative. Oral mucosa clean, tonsils enlarged (grade 2) and covered with white exudates easily removable with the spatula, the anterior segment of the tongue swollen and dry. Lung auscultation showed harsh breathing, sonorous sibilant rales, breath rate 42 breaths per minute. Heart tones clear, rhythmic, no audible murmurs, heart rate 132 beats per minute. The anterior wall of the abdominal cavity soft on palpation, increased bowel sounds along the intestines, moderate degree of meteorism. The liver is palpable 2 cm below the costal arch (densified and painful on palpation). Spleen not palpable. Using urinary catheter allowed for obtaining 50 ml of yellow-colored urine.

Clinical research (urgently):

Clinical hematology panel: RBC 3.5 x 1012/l, Hb - 122 g/l, color index 1.04, WBC 13.5 x 109/l, eosinophils – 0%, stab cell – 12%, segmented neutrophils – 22%, lymphocytes – 64%, monocytes – 2%, erythrocyte sedimentation -22 mm/h.

Urinalysis – WBC 3–6 per vision field, protein – 0.033 g/l, RBC 2–3 per vision field, mucus +.

Assignment:

1. State a preliminary diagnosis and justify it, what are the causes of the disease?
2. Formulate an optimal range of investigations. What findings can be found during these investigations?
3. Prescribe a rational treatment including dietetic therapy and emergency treatment measures.

Case №3

Woman, 24 years old.

Has 32-33 weeks' pregnancy. Went at gynecology department for an ordinary examination. Moved from another city two weeks ago. Supervised for pregnancy from the ninth week.

Gynecology anamnesis: menses from 13 years, four days per 29 days, moderately, no pain. No gynecological diseases.

Obstetric anamnesis: the fourth pregnancy, independently, two abortions by her wish before 12 weeks. Two years ago Cesarean section at 38 weeks by placenta previa, girl 3,540 g, bleeding 700 ml.

Objectively: height 168 cm, weight 76.5 kg (before pregnancy 65 kg). Obtained the ordinary examination[1]. Laboratory examination without deviations. Chronic tonsillitis, remission. Varicose transformation legs.

Prenatal screening at 12 weeks without deviations. No hospitalization during the present pregnancy. Took vitamins.

Third US screening: fetus has no pathology. US-placenta: a scar after Cesarean section at the low segment of the front wall. Placenta at the front wall, the length from caudal edge to internal os not more than 1 cm. The border between placenta and myometrium fuzzy, some area no border. The structure of placenta is changed by lacunas. At peripheral border of subplacentare zone a lot of twisted extended vessels (peak systolic speed more than 15 cm/sec), spread changes at back bladder wall. Bladder wall irregularly thickened, hypervascular.

Woman would like to have more children.

Assignment:

1. Formulate and justify a preliminary diagnosis.
2. What outpatient examination and treatment should be prescribed?
3. Delivery plan (accesses, an operation method, which operation team is needed). Which additional methods are needed and why?

[1] According to the Order of the Russian Federation Ministry of Health dated November 1, 2012 № 572n:

I trimester of pregnancy: Medical history. General physical examination of the respiratory system, circulatory system, digestive system, urinary system, the mammary glands. Anthropometry (measurement of growth, body weight, body mass index). Measuring the size of the pelvis. Inspection of the cervix in the mirrors. Bimanual pelvic examination. Blood tests (1, 2, 3, 4) and urine. Identification of major blood groups (A, B, 0) and Rh, biochemical screening levels of serum markers associated with pregnancy plasma protein A (PAPP-A) and free beta subunit of human chorionic gonadotropin (11- 14 weeks), the determination of antibodies to treponema pallidum in the blood, determination of antibody class M, G to human immunodeficiency virus HIV-1 and HIV-2 in blood, determination of antibody class M, G antigen of hepatitis B and viral hepatitis C in the blood. Microscopic examination of the vaginal fluid for gonococcus, Candida. Definition of venous fasting plasma glucose. Electrocardiography. Ultrasound Examination of the pelvic organs (in the period of 11-14 weeks).

II trimester of pregnancy: Medical history. General physical examination of the respiratory system, circulatory system, digestive system, urinary system, the mammary glands. Definition of abdominal circumference, height of uterine fundus, uterine tone, palpation of the fetus, fetal auscultation with a stethoscope. Blood tests and urine. Screening ultrasound of the fetus at term 18-21 week. Late first appearance in the II trimester: History. General physical examination of the respiratory system, circulatory system, digestive system, urinary system, the mammary glands. Anthropometry (measurement of growth, body weight, body mass index). Measuring the size of the pelvis. Inspection of the cervix in the mirrors. Bimanual pelvic examination. Blood tests (1, 2, 3, 4) and urine. Defining basic blood groups (A, 0) and Rh, determination of antibodies to Treponema pallidum in the blood, the determination of antibody class M, G to human immunodeficiency virus HIV-1 and HIV-2 in the blood, the determination of antibodies class M, G to hepatitis B antigen and viral hepatitis C in blood alpha-fetoprotein, free beta subunit of human chorionic gonadotropin (16-18 weeks of gestation). Definition of venous fasting plasma glucose with 75 g of glucose in 24-28 weeks (except in pregnant women with existing diabetes mellitus). Microscopic examination of the vaginal fluid for gonococcus, Candida. Electrocardiography.