VI INTERNATIONAL
MEDICAL
TOURNAMENT
(english-speaking league)

THE CASES OF THE CORRESPONDENCE STAGE

To participate in the Correspondence stage of the Tournament you must send solutions of **two tasks** out of three which were proposed (at your choice). If a team solves all three tasks, the total score will include the highest scores only from two tasks.

Registration requirements:

I. Solutions of the tasks must be represented by two documents:

   1. A presentation of a short solution in **PowerPoint** format(.ppt/pptx/pdf). The presentation can include no more than 10 slides;

   2. An expended solution with justifications, comments and a list of references in **MicrosoftOffice** format(.doc/docx/pdf). It can include no more than 6 pages A4, 1.0 interval, Times New Roman, 12 size, centered text alignment.

II. You should write the documents name follow the next example: «**a number of a case**» _ «**a team's name**».

III. The text of the tasks and the presentation mustn't include the name of the team or special University's symbols to ensure the anonymity of checking.

Send your Correspondence stage solutions to eng.medtourn@gmail.com before **February 11, 2019 (23:59 in Moscow time, UTC +03:00).**

Case 1

A 56-year-old female patient was admitted to the hospital with complaints of swelling of the face and lower extremities as well as general weakness.

History of the disease: The patient has noted progressive swelling for 2 months, which, in the patient's words, may be related to a previous acute respiratory viral infection. Furosemide therapy initially resulted in a moderate positive effect that was further lost even at increased doses of the diuretic drug. At the outpatient stage, clinical urinalysis revealed proteinuria of 3–3.5 g/l.

Medical history: Hereditary history: the parents are alive; the mother has arterial hypertension (hypertensive disease); the son is healthy.

She has suffered from arterial hypertension for more than 15 years. She is adapted to blood pressure (BP) of 130–140/80–90 mm Hg; the maximum BP is 170/100 mm Hg. The patient constantly takes Prestarium[1], 5 mg once a day, and Metoprolol, 50 mg per day, with achieving the target BP values.

The patient has suffered from chronic cholecystitis for many years. More than 20 years ago, she underwent deworming with Chloxyl for opisthorchiasis.

Status presents communis: A moderately severe condition. Height is 164 cm, weight is 70 kg. There are periorbital oedema, swelling of lower extremities symmetrical to the upper third of the shins. The heart border is unchanged. Heart sounds are clear and regular. The heart rate is 68 beats per minute; blood pressure on both arms is 140/85 mm Hg. In the lungs, breathing is vesicular, no rales. The tongue is clean and moist. The abdomen is soft and nontender upon palpation. The liver and spleen are not enlarged.

Paraclinical findings:

Complete blood count: leukocytes—8.7 * 10^9/l; erythrocytes—4.02 * 10^{12}/l; Hb—120 g/l; eosinophils—1%; stab neutrophils—2%, segmented neutrophils—53%; lymphocytes—40%; monocytes—4%; platelets—320 * 10^9/l; ESR—22 mm/h.

Clinical urinalysis: specific gravity—1,020; acid reaction; protein—4.5 g/l; glucose—0; leukocytes—2–4 per field of view; erythrocytes—0–1 per field of view; squamous epithelium—single cells per field of view.

Daily proteinuria is 5.2 g/day.

24-hour urinary protein: low-selective proteinuria. Urine culture: negative.

Nechiporenko test: leukocytes—2,300/ml; erythrocytes—1,000/ml.

Blood chemistry panel: potassium—5.2 mM/l; urea—8.1 mM/l; creatinine—98 μM/l; total protein—58 g/l; albumin—25 g/l; total cholesterol—7.5 mM/l; triglycerides—2.5 mM/l.

Abdominal and renal ultrasound examination: signs of chronic cholecystitis and sludge in the gallbladder; 2 focal lesions in the right hepatic lobe, which are probably hemangiomas.

Prospective follow-up: on the basis of clinical and biochemical data, chronic glomerulonephritis was preliminarily diagnosed. A biopsy of the kidney was performed to determine the morphological variant, but a poor cell composition was not sufficient to make the diagnosis.

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[1] INN: Perindopril

Given the progression of proteinuria, hypoproteinemia, and edema syndrome, prednisolone therapy was started with a gradual increase in a dose from 30 to 60 mg without a distinct clinical effect and positive changes in tests.

After 16 days in hospital, the patient developed a sudden intense pain on the left side of the abdomen, which required an emergency abdominal surgery. In the postoperative period, despite gradual withdrawal of glucocorticoids, there was a clear improvement in edema and proteinuria, with their full resolution within a month after surgery.

Questions:

1. Suggest a presumptive patient's diagnosis. In your opinion, what is the most likely variant of morphological changes? Justify your answer.
2. What are the potential mechanisms for the development of renal condition in this case.
3. Suggest recommendations for further examination and treatment of the patient.

Case 2

A 1.5-month-old boy; his mother **complains** of insufficient weight gain, loss of appetite, and anxiety. There were no other complaints.

According to a medical history, the child was born from the 2nd pregnancy, 2nd delivery. The older child is 15 years old. The pregnancy proceeded with signs of placental insufficiency at weeks 11–19, anemia, and acute viral intestinal infection at 7–8 weeks of gestation. The child was born by Cesarean section at 40 weeks of gestation; birth weight was 3,890 g, and height was 53 cm.

The child was breastfed up to 2 weeks, then, due to problems with the mother's health (infectious disease), the boy was switched to formula feeding. Initially, he received Similac formula; later, a local pediatrician recommended NAN 1 formula, which the child has received by the time of consultation with a specialist.

In his mother words, the child ate 100–120 ml of the mixture 7–8 times a day in the 1st month of life and gained weight well. However, starting with the 6th week of life, the feces became liquefied, olive-colored, with strands of mucus, single streaks of scarlet blood. The mother noted that the child became restless, fidgeted when feeding, threw a nipple and took it again. In this case, the amount of a fed mixture decreased to 70–80 ml per feeding. The boy stopped gaining weight.

Objective examination: The patient's condition is relatively satisfactory; the baby is active, responds adequately to the examination, and tries to smile. The body weight is 4,550 g; the height is 57 cm. The skin is of a normal pink color, elastic, with excellent turgor. The oral cavity is clean; the tongue is slightly covered with a white coating at the root. Heart sounds are clear and regular. Breathing is nasal, easy, puerile upon auscultation. There are no pathological heart and lung sounds upon auscultation. The abdomen is enlarged and bloated; palpable intestinal loops filled with gas; occasional gurgling. Upon palpation, the child is restless and tries to move away from the palpating hand. The liver is not enlarged. The anal region is hyperemic, not edematous.

Diaper inspection: the feces are liquid, completely absorbed into the diaper fabric; the color is dark olive; there are streaks of mucus and single streaks of blood; the smell is strong and sourish.

Laboratory findings:

Coprogram: heterogeneous consistency, liquid, pH 5.2, detritus, 10–20 leukocytes per field of view, 5–10 erythrocytes per field of view, neutral fat +, soaps ++.

Complete blood count: erythrocytes—4.85 x 10^{12}/l; hemoglobin—135 g/l; color index–0.83; leukocytes—7.2 x 10^{9}/l; ESR—7 mm/h.

Complete urinalysis: specific gravity—1,015; leukocytes—2–3 per field of view; erythrocytes—0–1 per field of view; oxalates +; squamous epithelium—2–3 per field of view.

Neurologist opinion: effects of intrauterine hypoxia, enhanced flexor tone, increased tendon reflexes.

Questions:

1. What is the cause of infant feeding disturbance? Why the amount of a sucked mixture has decreased? Formulate a pathogenic paradigm.
2. What additional examinations are required to diagnose the disease?
3. Make a plan for feeding and treating the infant given the identified condition.

Case 3

A 55-year-old male patient admitted to the Cardiology Critical Care Unit of the City Hospital with pain behind the sternum at 8.30 pm.

Complaints: At the time of examination, the patient complains of compressing chest pain and severe back pain shooting down the right thigh.

History of the disease: The medical history is collected from the patient and his wife. Patient's blood pressure (BP) has risen to 180/110 mm Hg for 10 years; the patient has taken Lisinopril and Amlodipine for the last two years. Previously, the patient had no chest pain during physical exercises and at rest. Today, the patient was at work (pizza delivery); suddenly, at 6.45 pm, he developed an intense acute lumbar pain shooting down the right leg, and then a compressing pain behind the sternum. The patient called an ambulance. Hemodynamic indicators are not listed in the ambulance run report. Pre-hospital medical care is not described. The patient was delivered to the emergency room, examined by a neurologist and a surgeon, and hospitalized to the Cardiology Critical Care Unit with coronary artery disease (CAD): *Acute coronary syndrome (ACS) without ST-segment elevation.*

Medical history:

The patient denies allergy to drugs. The patient denies any history of cerebrovascular disturbance, myocardial infarction, diabetes, peptic ulcer disease, tuberculosis, and all types of hepatitis.

He has a history of inguinal hernia. The patient has suffered from urolithiasis; according to his wife, he had renal colic attack more than 20 years ago.

Objective status: The patient's condition is serious. He is conscious and cooperative. Agitated. The patient is suffering from pain. The body type is normal; the patient is normotrophic. BMI is 24 kg/m2. Body temperature is 36.6 ºC. The skin is of a normal color and moisture, warm. The lymph nodes are not enlarged and nontender upon palpation. Heart sounds are soft, the rhythm is regular. There are no heart murmurs. BP is 170/110 mm Hg; the heart rate (HR) is 60 beats per minute. Breathing is symmetrical, harsh, without rales. The frequency of respiratory movements is 17 per minute. SaO2 is 97%. There are no sounds over the aorta and renal arteries. Pulsation on the arteries of the lower extremities is preserved and symmetrical. The abdomen is soft and nontender upon palpation. The costovertebral angle tenderness test is negative. The liver is not enlarged. The stretch symptoms are negative. Palpation in the area of the lumbar spinous processes is somewhat painful. There is no peripheral edema.

ECG: Sinus rhythm; heart rate of 70 beats per minute; signs of left ventricular hypertrophy; impaired repolarization processes in the anterior wall of the left ventricle.

Laboratory findings—*tests and examinations*:

Blood chemistry panel	
Creatine phosphokinase, U/l	322
Creatine phosphokinase-MB, U/l	15.6
Urea, mmol/l	4.99
Creatinine, μmol/l	85

K, mmol/l	3.86
Na, mmol/l	143.3
GFR, ml/kg/1.7 m^2	80
AST, U/l	20.6
ALT, U/l	16.1
Blood glucose, mmol/l	6.55
Troponin I, ng/ml (normal range, 0–0,1 ng/ml)	0
Total cholesterol, mmol/l	3.77
Total protein, g/l	61.9
Total bilirubin, mmol/l	14.4
Direct bilirubin, mmol/l	3.77
Amylase, U/l	85.1
Complete blood count	
Erythrocytes, $*10^{12}$/l	3.93
Hemoglobin, g/l	126
HCT, %	36.3
Platelets, $*10^9$/l	186
ESR, mm/h	4
Leukocytes, $*10^9$/l	10.36
Neutrophils, %	83
Lymphocytes, %	10.4
Monocytes, %	6.3
Eosinophils, %	0.1
Basophils, %	0.2

Coagulation panel: activated partial thromboplastin time—34 s; fibrinogen—2.0 g/l; international normalized ratio—1.05.
Complete urinalysis: protein—0.49 g/l; specific gravity—1,030; leukocytes—1–12 per field of view; erythrocytes—3–4; hyaline casts—5–6; squamous epithelium—4–10 per field of view.
Blood group: A (II), Rh negative.

A **preliminary diagnosis** was made based on the medical history and initial examination findings: *Coronary artery disease (CAD): Acute coronary syndrome without ST segment elevation. Acute heart failure (Killip I).*

Hypertension stage III, grade 3, risk 4, worsening course. Complicated hypertensive crisis.
Dorsopathy of the lumbar spine, lumbar ischialgia syndrome.
Urolithiasis. Renal colic?

Questions:

1. Make the differential diagnosis. What diagnosis do you suggest?
2. What examinations are urgently needed?
3. What is your approach to managing the patient?
4. What risks are associated with prescription of standard therapy of CAD: ACS?