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PULMONARY EMBOLISM IN PATIENT WITH GIGANTICMYOMA OF THE UTERUS

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Abstract. The article describes dynamic in condition of diagnosed and successfully treated patient with acute recurrent pulmonary embolism on the background of gigantic myoma of uterus.
Key words: pulmonary embolism, myoma of uterus, uterine arteries embolization.

ТРОМБОЭМБОЛИЯ ЛЕГОЧНОЙ АРТЕРИИ У БОЛЬНОЙ С ГИГАНТСКОЙ МИОМОЙ МАТКИ

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Реферат. В статье описана динамика состояния пациентки с диагностированной и успешно пролеченной тромбоэмболией легочной артерии на фоне гигантской миомы матки.
Ключевые слова: тромбоэмболия легочной артерии, миома матки, эмболизация маточных артерий.

Pulmonaryembolism (PE) is the most insidious disease in the cardiologic practice.Its spectrum of clinical manifestations is broad varying from asymptomatic cases (about 70% of PE was not diagnosed alive, according to autopsy [1]) to shock and sudden death [2]. Syncope (fainting-fit) was met only in 14—19% of verified PEcases [3, 4].

A 42-yearold Caucasian woman was admitted to the Kazan city hospital with complaints on severe squeezing parietal headache after the repeated loss of consciousness on the day of admission.

2 weeks before a papilloma of the upper eyelid was removed. 5 days before admission she felt shooting pain in the left hemithoraxexacerbating on breathing. The followingday she called for an ambulance and diagnosis of intercostal myositis was made.On the day of admission the patient twice lost consciousness in presence of her daughter, the latter confirmed that her mother had no pulse and breathing and performed cardio-pulmonary resuscitation which was effective. The patient was taken to the gynecological clinic where no indications forurgent removal of large uterinemyoma were found out.She was also examined by a surgeon.Thepatient underwent the diagnostic thoracocenthesis of the left pleural cavity, a small amount of serous fluid being obtained.After that the patient was referred to therapeutic department with the diagnosis of left-sided effusive pleuritis.

It is known that patient has been suffering from large uterinemyoma for a long time. In the past medical history there ischolelythiasis, iron-deficient anemia during the last 8 years, varicose veins of the lower extremities.

She had regular heavy periods for about 5—6 days, 4 pregnancies: 2 full-term deliveries and 2 abortions.The last period was a week before admission.

On examination: patient's condition was grave, patient was conscious, skin pallor, prominent capillary net on the lower extremities was observed. Dullpercussion note and diminished vesicular breath sound over the lower lateral parts of the left hemithoraxwere detected. RR = 18 bpm. Rhythmic diminished heart sounds were heard, HR = 150 bpm and BP — 130/80 mm Hg. On examination of the abdominal cavity the round painless mass arising from the pelvis with the upper pole 2—3 cm below the level of the umbilicus was found.

In the CBC: haemoglobin — 91 g/L, RBC — $3,4\times10^{12}$/L, ESR — 55 mm/h, WBC — $9,0\times10^{9}$/l, band neutrophils —

3%, segmented neutrophils — 86%, lymphocytes — 6%, monocytes — 5%, eosinophils — 0%. Marker of myocardial injury — troponin-T test was slightly positive.

*Chest X-ray*revealed the left heart border along the left midclavicular line, increase of lung markings, a small effusion above the left diaphragm.

On the ECG sinus tachycardia with HR 120 bpm, horizontal electric axis position (∠α +18°) *(fig. 1)* was recorded.

The patient was taken to the ICU where she was administered antibiotics, hepatin IV, aspirin, β-blockers, iron.

On gynecological examination uterine myoma corresponding to 20 weeks of pregnant uterine was detected. Uterus was firm and painless.

The heart ultrasonography disclosed thickening of the ascending aorta and moderate mitral regurgitation.

The uterus ultrasound examination disclosed significant enlargement of the uterus (155 mm×116 mm×136 mm) with uneven contours and myometrium of non-homogeneous structure,subserous nodes of 32 to 72 mm.

The differentiation between acute coronary syndrome and syncope of unknown origin (PE?) started from the day of the patient's admission.

According to ESC (2008) recommendations, PE expectancy was intermediate due to Wells score and revised Geneva score [3] in our patient.

During the following 2—3 days recurrent transient syncope accompanied by convulsions were observed by the ICU doctor. Patient's condition was generally getting worse: combined dyspnoea with RR 24—26 bpm, lips and tongue cyanosis, dullness in the right subscapular area over which diminished vesicular breath sounds and fine crackles were heard, S_2 doubling and accentuation at the pulmonary artery developed.

On the series of the chest X-ray films increase of lung markings in both lower lobes, their consolidation, maintenance of effusion in the left costal sinus, appearance of opacity in the right lower lateral zones were disclosed.

On dynamic ECG tracings signs of the right ventricular overload as deepening of S waves in the left chest leads (V_4-V_5-V_6) *(fig. 2)* were recorded.

Taking into account all the revealed symptoms and signs, PE risk factors (uterine tumour, varicose veins of the lower extremities,precedingsurgical intervention), dynamics of clinical data, diagnosis of PE wasmade. It was necessary to prove clinical diagnosis with modern laboratory and instrumental data.

Determination of D-dimer — fibrin degradation product is currently standard PE diagnostic method. Its level rises immediately at fibrinolysis activation just after arisen clotting in the vessels bed. Method is sensitive (96%) but non-specific [2]. *D-dimer* was found 249 mg/l (normal 63,8—246,4 mg/l).

On subsequent echocardiography dilatation of pulmonary trunk and its branches (the right branch to the greater extent), 3,7 cm×1,6 cm clottage of medium echogenity in the right pulmonary artery (from subcostal view), that emerged to the bifurcation and one of the clot fragments is floating; dilatation of the right heart chambers, medium pulmonary hypertension, moderate tricuspid regurgitation, pericardial effusion were disclosed.

Compression venous ultrasonography of the lower limbs and pelvic veins: the inferior vena cava and the right iliac vein are not visualized.The left common iliac vein is hardly visualized and is scarcely colored on color Doppler, perhaps, due to occlusion by clots.

Thehelical multidetector computed tomography is currently the leading method in PE diagnosis, and its resolution is less than 1 mm [2].

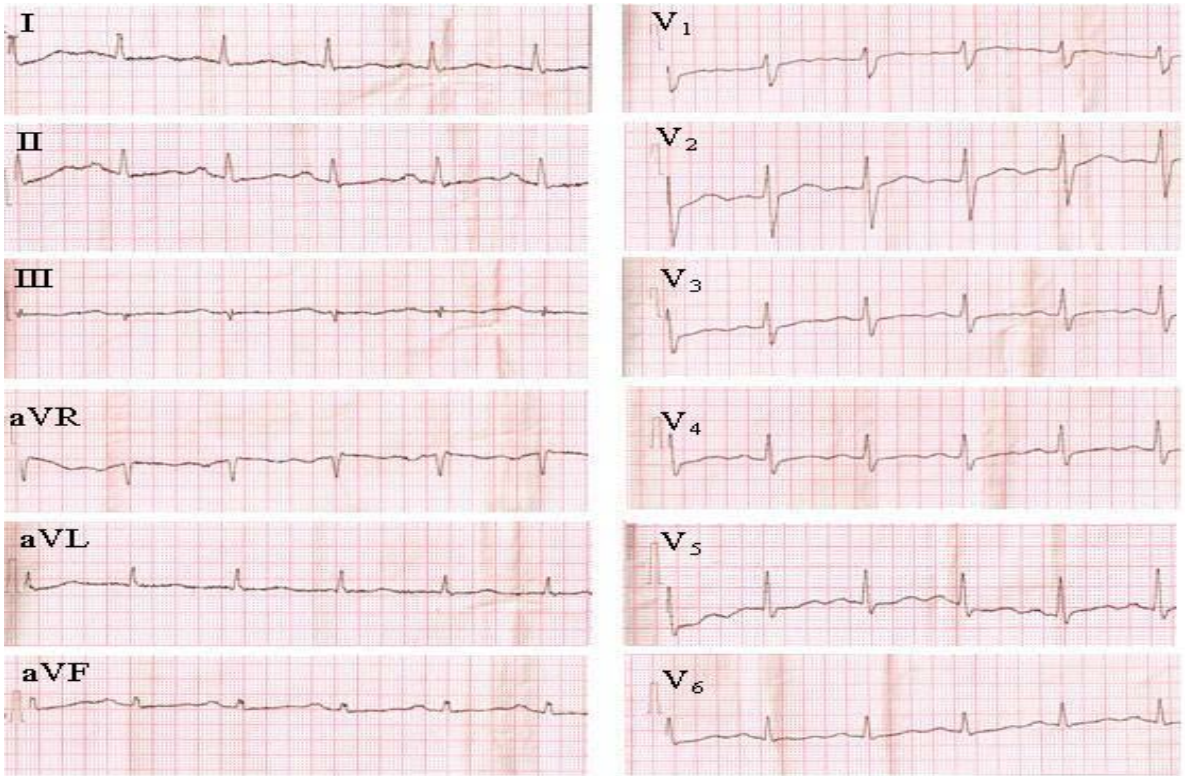

Fig.1. ECG of patient on the day of admission

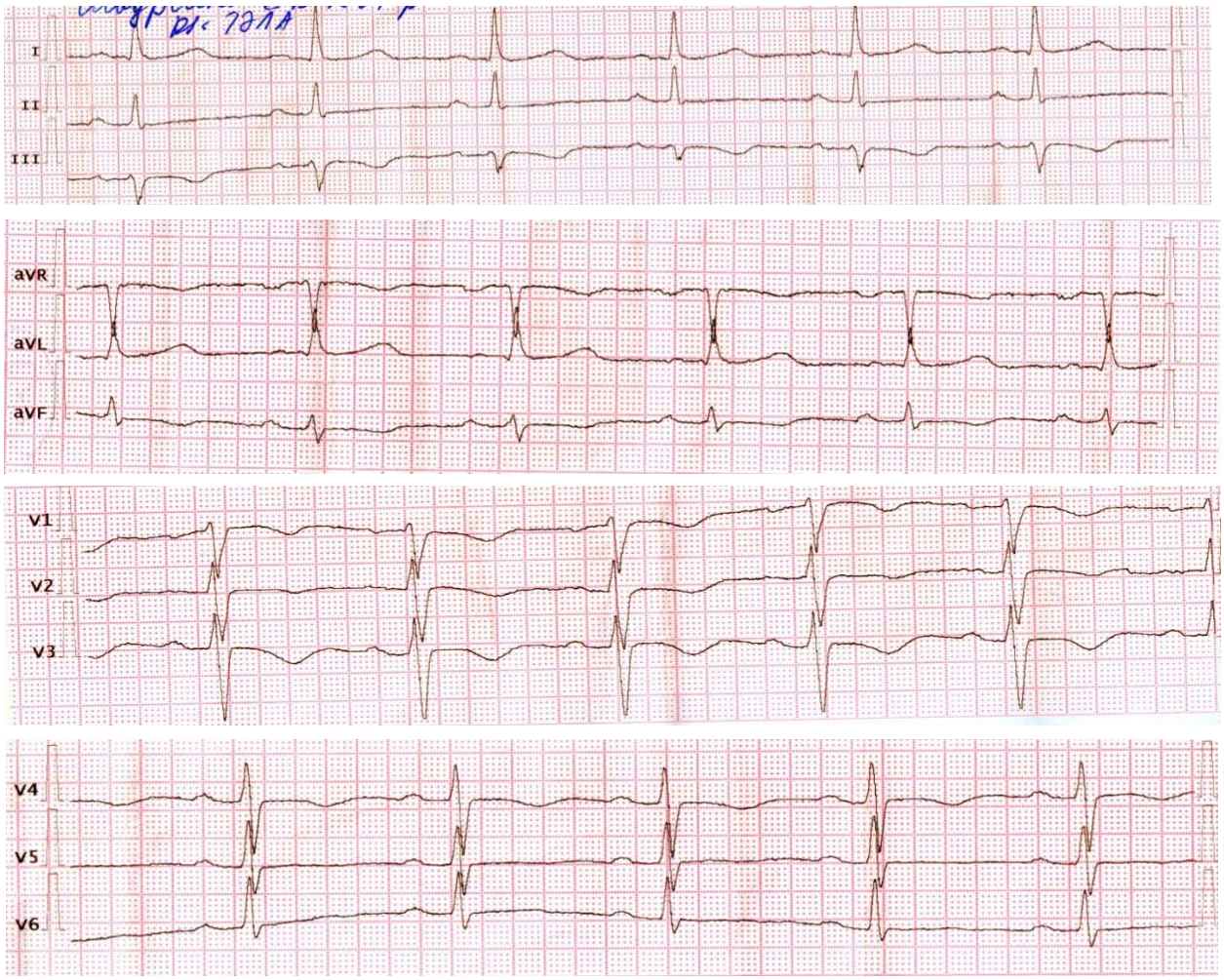

Fig. 2. ECG of the patient on the 3rd day in the hospital

Helical multidetector computed tomographic (HMDCT) angiography of the pulmonary artery and pelvic organs. In the right pulmonary artery bifurcation zone the extended clottage with thickness of about 15 mm, extending to lobar and segmental arteries of the lower and medial lobes was defined. In the bifurcation zone of the pulmonary artery a 11×26-mmclottage was detected. In the left pulmonary artery bifurcation zone with extension to separate segmental branches of the lower lobe and lingular arteries the clotting masses 14 mm×32 mm in size were detected. In the VIII, IX, and X segments of the right lung the infarction pneumonia 85×41 mm in size, adjacent to the pleura with a wide footing was detected.More less triangular shaped infarct-pneumonia 17×20 mm in size was detected in the left IX segment. There was about 50 ml of fluid in the left pleural cavity. Space-occupying lesion with uneven tuberous contours 114 mm×156 mm×147 mm in size, most probably located in the uterus cavity, of heterogenous structure, with 24—48 units of H density was observed. After IV radiographic opacification contrast-enhancing necrotic zones within mass were detected. Extended clottage of the left common iliac and internal iliac veins was determined. HMDCT conclusion: signs of PE of both branches of the pulmonary artery in the bifurcation zone with extension to separate segmental arteries of the right middle and lower lobes and the left lingular and lower lobes. Infarct-pneumonia in the right VIII, IX, X and the left IX lung segments.Pelvic mass (uterusmyoma?).Signs of common and internal iliac veins thrombosis.

The patient with proven PE was immediately transferred to the vascular surgery department with the diagnosis: PE of both branches of pulmonary artery in the bifurcation zone with extension to separate segmental arteries of the right middle and lower lobes and the left lingular and lower lobes; infarct-pneumonia in the right VIII, IX, X and the left IX lung segments; common and internal iliac veins thrombosis; gigantic uterine myoma; iron-deficient anemia of moderate degree.

In the vascular surgery department the patient underwent grafting of cava-filter into the inferior vena cava. After that the patient was transferred to the gynaecologic department for the removal of the uterine myoma. Severity of the patient's condition did not allow to perform a major surgery so uterine arteries embolization was performed.

Uterine arteries embolization is usually performed by vascular surgeon or gynecologist in the X-ray operation room by the puncture of the femoral artery on the angiograph by means of superselective catheterization of uterine artery with the use of hydrophilconductor and an-giographic catheter. The dye is inserting simultaneously with the frame-by-frame recording. On the received angiograms the diameter of the uterine artery, counterstained dimensions of myomatous nodes and architectonics of the intranodal arteries, as well as intercommunication with ovarian arterial

system is estimated. Microemboli are used for embolization [5]. Angiographic criteria of procedure effectiveness are cessation of blood flow in the uterine artery and contrast enhancing in the uterus.After the procedure patients are on in-patient treatment for case follow-up in the gynecological department.Results are evaluated by the periodsstabilization and disappearance of the signs of the disease. Reduction of myomatous nodes and generally of uterus dimensions actively happens in the first 6-8 months after the use of this method.

After uterine arteries embolization the patient has observed «the birth» of few necrotizing malodorous myomatous nodes, after their discharge patient's condition and temperature gradually returned to normal values: the normal menstrual cycle was restored, although bleeding duration was unstable. The ultrasonography revealed that the cava-filter in the infrarenal part of the inferior vena cava was without thrombotic masses.

One year after the PE onset on the follow-up visit the patient appeared completely asymptomatic. In October, 2010, she resumed full-time job. On examination bilateral dullness areas with diminished vesicular breath sound in the inferior lateral parts of the chest were found. On abdominal examination no mass was revealed.Chest X-ray showed areas of pneumosclerosisin the left lung and pleural adhesions in the right. Uterus ultrasonography revealed remarkable reduction of the uterus sizes (88·90 cm). On the transthoracic echocardioscopy no thrombotic masses were found in the pulmonary artery, signs of moderate pulmonary hypertension and moderate tricuspid regurgitation were preserved.

CBC: haemoglobin — 112 g/L, RBC — $5,05\times10^{12}$/L, Ht — 32,2%, ESR — 31 mm/h, WBC — $8,1\times10^{9}$/L, granulocytes — 66,9%, lymphocytes — 30,5%, monocytes — 2,6%, thrombocytes — 323×10^{9}/L. APTT (activated partial thromboplastin time) — 38,1 sec, INR (international normalized ratio) — 2,72.

ECG *(fig. 3)* showedregular sinus rhythm with HR=90 bpm, horizontal electrical axis position (угол α +9°), delay in the intraatrial conduction (P-wave duration = 0,12 msec). Signs of the right ventricular overload (S waves in the V_4-V_5-V_6 leads), observed at the onset of PE, disappeared.

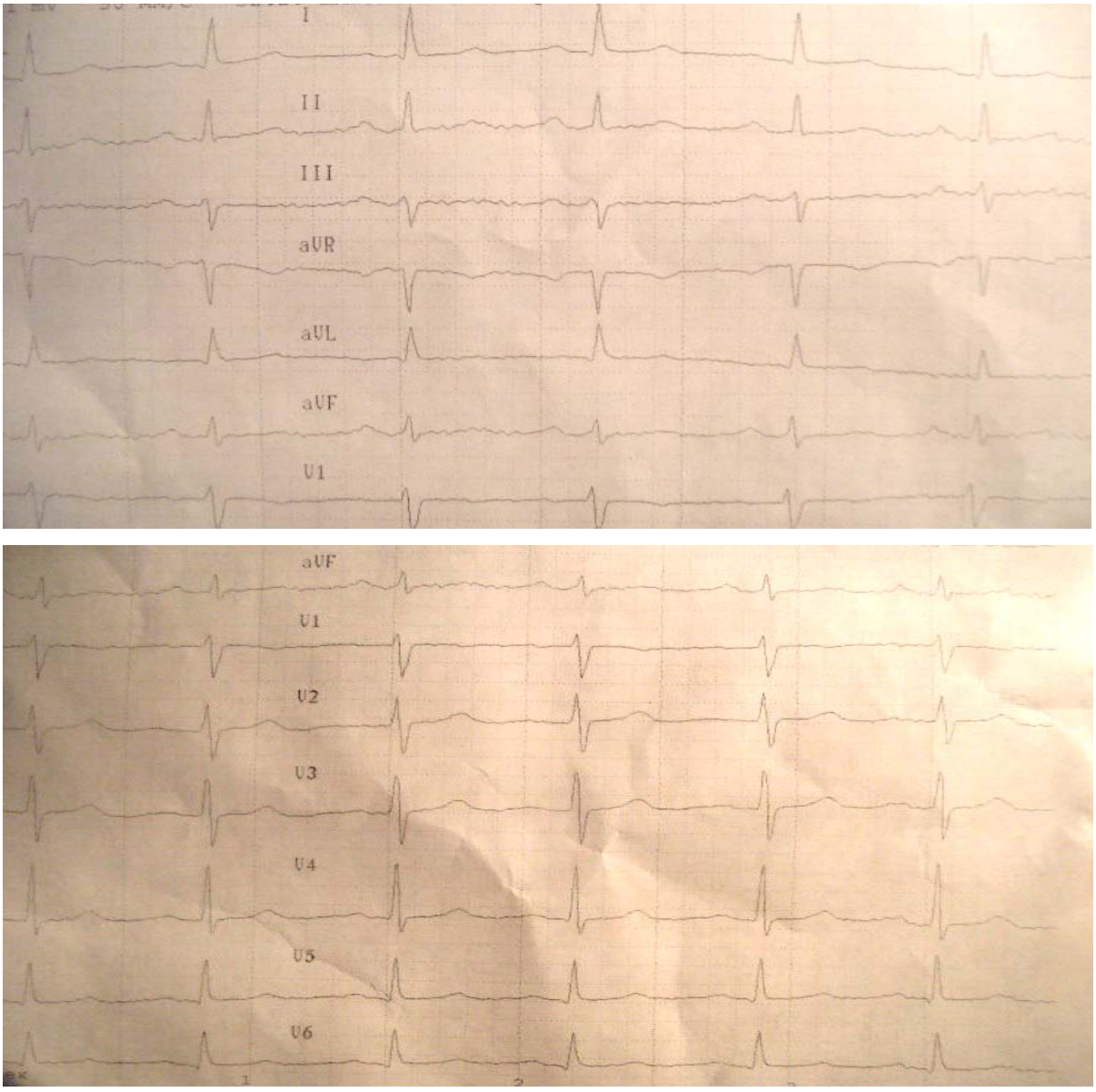

Fig. 3. ECG of the patient one year after PE onset

Now the patient is taking warfarin and β-blockers for tachycardia, she is under district physician and gynecologist care.

This case is in interest because the patient had the massive PE in both branches of pulmonary artery, its segmental branches with the development of infarct-pneumonia and clinical manifestations in the form of recurrent syncope. The reason of this life-threatening condition was the gigantic myoma of uterus. Patient was aware of it, but she did not perform any efforts to remove it. Correct diagnosis and proper management of the patient allowed to resolve this dramatic situation where, the patient was hanging between life and death. Now the patient is working and is leading a good life, having a cava-filter in the inferior vena cava and constantly taking anticoagulants. The obtained resultstestify to thehigh quality of medical professionals and timely detection of PE.At the same time it is necessary to notice the patient's self-neglecting and this marks the trend of public opinion in our country.

This article is based on our previous publications [6, 7].

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