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THE FIRST CASE OF ATRIAL FIBRILLATION: APPROACH ISSUES

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On the example of the clinical case of newly diagnosed atrial fibrillation, against the background of ischemic heart disease, diagnostic issues, clinical diagnosis, treatment tactics were considered. The emphasis was placed on the importance of lifestyle, the need for outpatient monitoring, timely examination and correction of patient treatment, including surgical intervention.

KEY WORDS: ischemic heart disease, atrial fibrillation

ПЕРШИЙ ЕПІЗОД ФІБРИЛЯЦІЇ ПЕРЕДСЕРДЬ: ПИТАННЯ ТАКТИКИ

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На прикладі клінічного випадку вперше виявленої фібриляції передсердь, на тлі ішемічної хвороби серця розглянуті питання діагностики, встановлення клінічного діагнозу, тактики лікування. Поставлені акценти на значенні способу життя, необхідності амбулаторного спостереження, своєчасному обстеженні та корекції лікування пацієнта, в тому числі і хірургічного.

КЛЮЧОВІ СЛОВА: ішемічна хвороба серця, фібриляція передсердь

ПЕРВЫЙ ЭПИЗОД ФИБРИЛЯЦИИ ПРЕДСЕРДИЙ: ВОПРОСЫ ТАКТИКИ

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На примере клинического случая впервые выявленной фибрилляции предсердий, на фоне ишемической болезни сердца рассмотрены вопросы диагностики, установления клинического диагноза, тактики лечения. Поставлены акценты на значении образа жизни, необходимости амбулаторного наблюдения, своевременном обследовании и коррекции лечения пациента, в том числе и хирургического.

КЛЮЧЕВЫЕ СЛОВА: ишемическая болезнь сердца, фибрилляция предсердий

INTRODUCTION

Atrial fibrillation (AF) is a supraventricular tachyarrhythmia characterized by chaotic atrial electrical activity, high heart rate (> 350 bpm) and irregular ventricular rhythm (with no total AV blockade), with ineffective atrial contractions which is associated with an increased risk of thromboembolism. AF is the most common persistent cardiac arrhythmia, frequency of which in the general population is 1–2 % [1–2].

AF affects more than 6 million people in Europe and its prevalence in the next 50 years

will at least double, considering aging of the population.

AF increases the risk of stroke by 5 times, and every fifth stroke develops against the background of this arrhythmia. In patients with AF ischemic stroke often end with death, leads to more severe disability and recurs more often than in patients with a stroke of a different nature. Accordingly, the risk of death in patients with stroke associated with AF increases by 2 times and the financial costs of treatment – by 1.5 times.

Prevalence of AF increases with age: from < 0.5 % at the age of 40–50 years to 5–15 % at the age of 80 years [3–7]. This arrhythmia

develops more often in men than in women. The risk of developing AF is about 25 % after 40 years [8]. Prevalence and incidence of AF among representatives of the non-European race have been studied worse.

In most patients, AF progresses steadily with the development of persistent or permanent forms against the background of the development of the underlying disease. Earlier diagnosis of arrhythmia would allow prescribing medications timely to prevent not only the effects of arrhythmia, but also the progression of AF with the development of refractory arrhythmia [1, 9–10].

The main risk factors for AF are age over 65 years, arterial hypertension (AH), coronary heart disease (CHD), structural heart disease (valvular dysfunction, hypertrophic cardiomyopathy, systolic/diastolic heart dysfunction, chronic heart failure (CHF), hyperthyroidism, obesity, diabetes, chronic obstructive pulmonary disease (COPD), sleep apnea, chronic kidney disease.

In the tactics of the introduction of patients, key points are singled out: emergency reduction of the first occurrence of an attack (ensuring optimal blood pressure (BP) and sinus rhythm)); eliminating provoking factors (lifestyle modification, treatment of previous cardiovascular diseases); strokes risk assessment (prescription of oral anticoagulants to high-risk patients); blood pressure evaluation and the prescription of appropriate therapy; eliminating the main symptoms (antiarrhythmic drugs, cardioversion, catheter ablation) [1, 10].

CLINICAL CASE

The patient is 59 years old, occupies an administrative job, complains of exertional dyspnea while climbing the stairs to the 4th floor, unproductive paroxysmal cough after considerable physical exertion (skiing), shins swelling in the evening, increased fatigue, a feeling of general weakness.

Antecedent anamnesis: 03.2006 – for the first time a constricting sternal pain, short breath when climbing to the 7th floor with a stop at the 3rd. Symptoms were relieved after 1 tablet of nitroglycerin (0.5 mg). 18.03.2006 - the heart pain becomes more intense. There's no relief after nitroglycerin. The ambulance delivered the patient to the cardiological department of the hospital with an urgent diagnose of «acute myocardial infarction». The hospital diagnosis: «IHD: acute (18.03.06) Q-

positive transmural myocardial posterior infarction. Subocclusion of the right coronary artery. 30 % stenosis of the right interventricular brunch. Hypertensive disease, stage III». 11.05.06. – RCA stenting. The patient controlled BP irregularly, led an active lifestyle, was fond of mountain skiing and worked in an administrative position. 5.01.2017. – abrupt short breath when climbing the stairs to the 5th floor, relieved after a short rest. The symptom occurred repeatedly within the next two weeks. 23.01.2017. – Atrial fibrillation was registered for the first time on the ECG in a clinic. 26.01.2017. – hospitalization in the cardiological department of the hospital for examination and selection of adequate therapy.

Patient anamnesis: Profession: radio engineer. At the age of 17 the patient underwent tonsillectomy. The patient smoked at the age of 45–50 years (1 pack/month for 5 years). Tuberculosis, diabetes mellitus, venereal diseases, rheumatism, oncological, psychiatric illnesses, severe traumas are disclaimed by the patient.

At the age of 16–17 – Botkin's disease.

Burdened hereditary anamnesis: father - stable angina, hypertension. He died to a stroke at the age of 79 years. Mother – cancer of the gallbladder. The allergic anamnesis is not burdened.

Objective status: The general condition is relatively satisfactory. Consciousness is clear. The position is active. Emotionally stable. Hypersthenic. Height 176 cm, body weight 100 kg. BMI = 32.3 (obesity of the I degree). Skin covers, visible mucous are pure, pale pink. Peripheral lymph nodes are not palpable. Thyroid gland is moderately enlarged, painless on palpation. CVS: heart rate is 80, pulse 61 beats/min, pulse deficit is 19. BP on the left arm is 135/80 mm Hg. BP on the right arm is 140/80 mm Hg against the background of antihypertensive therapy. During percussion the boundaries of relative cardiac dullness are uniformly widened: the left border is in the 6th intercostal space, 1 cm outward from the midclavicular line, the right border is in the 4th intercostal space, 2.5 cm righter from the sternum, the upper border is in the 2nd intercostal space. At auscultation heart sounds are muffled, arrhythmic, there is an accent of the second tone over the aorta. Respiratory system: BR – 16. Percutally above the lungs a clear pulmonary sound is identified.

Auscultatory: vesicular breathing above the entire surface of the lungs. The tongue is clear and moist. The abdomen is soft, enlarged in volume due to subcutaneous fat, painless during palpation. The liver protrudes 1 cm from under the edge of the costal arch, painless during palpation. The symptom of effleurage in the lumbar region is negative on both sides. Moderate edema of both lower limbs in the region is determined.

Laboratory findings: Clinical blood analysis (from 02.02.2017): increase in hemoglobin (Hb – 169 g/l), insignificant erythrocytosis (5,91 g/l), lymphocytosis (1–38,6 %), increase in hematocrit (Ht – 51,0). Clinical urine analysis (from 01.21.2017): the indices within the limits of the norm, except for insignificant proteinuria – 0,043 g/l. Biochemical blood test

(from 01.21.2017): the parameters are within the norm except for the increase in the level of urea (90 mmol/l), aminotransferases (ALT-6 U/L, AST-43 U/L), hyperkalemia (K – 5.19 mmol/L), increased atherogenicity coefficient (4,1) and lowered HDL cholesterol level (0,78 mmol/l). Thyroid hormones analysis (from 30.01.2017) – all indicators are within the norm.

Instrumental diagnostics: ECG (from 01/26/2017): atrial fibrillation, heart rate 73 b/min. Cicatricial changes in the myocardium of the left ventricle in the region of the posterior wall. Nonspecific intraventricular conduction abnormalities. Echocardiography. The dynamics of the results is presented in Table 1.

Table 1

Dynamics of EchoCG results

Factor	2006	2017
Myocardial hypertrophy	in the left ventricle only	in both of the ventricles
Dilatation of cordial cavities	not revealed	dilatation of all cavities
Atherosclerotic Changes	in the aorta only	in the aorta, aortic and mitral valve
Dyskinesia	akinesia of the posterior-apex-lateral segment of myocardium	akinesia in the posterior, posterolateral and basal walls of the left ventricle
Pathological regurgitation	not revealed	mitral regurgitation of II-III degree; tricuspid regurgitation of the I degree
Ejection fraction	61 %	44 %

Ultrasound of internal organs (from 01/30/2017): Diffusive changes in the liver and pancreas. Diffusive changes in the liver parenchyma with its enlargement by the type of fatty hepatosis. Polyp, kink and stagnation gallbladder. Microrolithiasis. Hyperplasia of thyroid gland, degree II. Cysts of both parts of the thyroid gland. Parathyroid hyperplasia on the right.

Daily monitoring of ECG (from 30.01.17): during all monitoring, atrial fibrillation was recorded with an average heart rate of 71 b/min with single and paired ventricular extrasystoles. Supraventricular ectopic activity, «the mixed type». Ventricular ectopic activity is the «nocturnal type of arrhythmia». Circadian index – 1.09 (rigid rhythm).

Veloergometry (from 30.01.17): The maximum power of the proposed load is 50 W. The test is positive. The signs of coronary insufficiency in the form of ST elevation in lead

III and aVF by 1.5 mm were revealed. Angina pain was not detected during the procedure.

Transesophageal echocardiogram (from 03.03.17): a thrombus in the left atrial appendage, no thrombi in the right ear and atrium were detected. In the front part of the NA a functioning oval aperture 0.15 cm in diameter was detected.

Consultation of an arrhythmologists KNIUS (from 03.03.17): The patient is recommended to restore the heart rate a month after anticoagulant therapy and repeated esophagus EchoCG.

Clinical diagnosis:

Basic diagnosis: IHD: postinfarction (18.03.2006 Q-positive posterior) cardio-sclerosis. PCA subocclusion. 30 % stenosis of the right interventricular brunch. PCA stenting (11.05.06). Hypertensive disease, stage III, the 2nd degree. Newly identified secondary atrial fibrillation. EHRA II, CHADS-VASc-2, HAS-

BLEED-1, CH I-IIA with diastolic LV myocardium dysfunction (EF 45 %). Very high additional cardiovascular risk.

Concomitant diagnosis: thyroid gland hyperplasia, the 2nd degree. Cysts of both parts of the thyroid gland. Parathyroid hyperplasia on the right. Diffusive changes in the liver with its enlargement by the type of fatty hepatosis, polyp of the gallbladder.

Recommendations for the patient approach: lifestyle modification; anticoagulant therapy; sinus rhythm control: cardioversion or heart rate control; treatment of arterial hypertension; treatment of heart failure; re-consultation of the arrhythmologists to determine the tactics of restoring rhythm.

Taking into account the thrombus in the left atrial appendage the patient should be treated with a vitamin K antagonist (INR 2.0–3.0) and repeat transesophageal echocardiography. If the thrombus is dissolved, cardioversion can be performed, after which lifelong therapy with oral anticoagulants is prescribed. If the thrombus persists, restoring the rhythm can be refused in favor of controlling the frequency of the ventricular rhythm, especially if the symptoms of AF are controlled, given the high risk of thromboembolism in the background of cardioversion [1].

Treatment plan:

Non-drug treatment: diet: restriction of the calorie value food, carbohydrates and fats, table salt, adequate volume of consumed liquid; physical activity (controlled physical activity);

non-smoking, non-alcohol habits; body weight control.

Medication: Rivaroxaban 20 mg 1p/d; Nebivolol 2.5–5 mg/d in the morning under the control of the pulse and blood pressure (with SBP < 105 or pulse < 50 the drug should be canceled, ECG should be recorded and therapy correction is performed); Amlodipine 5 mg; Essentiale 1 caps. 2 p/d; resuming amiodarone 3 weeks later: if the pulse is 70 or more at 200 mg 2 times a day, if the pulse is less than 70 – 100 mg 2 times a day; re-conducting the ECHO-KG 4 weeks later. In the absence of thrombi in the atria, attempt to restore the rhythm (cardioversion) [1, 11].

CONCLUSIONS

The example of a clinical case shows the effect of excessive physical exertion and psychoemotional factors on the onset of atrial fibrillation and the progression of heart failure in a patient who underwent myocardial infarction. For the first time the emergence of atrial fibrillation, 11 years after the infarction, is not amenable to drug therapy. The further tactics of the patient's management will depend on the results of anticoagulant therapy and repeated esophageal echocardiography. Moreover, the strategy of monitoring the frequency of ventricular rhythm is not inferior to the rhythm control strategy for the effectiveness of prevention of cardiovascular mortality and morbidity [1, 12].

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