Clinical case

UDC: 616.12-009.72

PRINZMETAL ANGINA PECTORIS IN CLINICAL PRACTICE: POSSIBILITY OF CHRONO-THERAPEUTIC APPROACH AND LIMITATIONS OF COMORBIDITY

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Prinzmetal Angina (synonyms: vasospastic angina, variant angina) in accordance with the definition of, it is caused by coronary artery spasm which occurs during sleep at night, between midnight and early morning and manifested with ST segment elevation on the ECG.

Frequent «attachment» to the attacks of a certain period of the sleep period, gives you the opportunity to use chronomedical approaching the treatment of patients suffering from it, as demonstrated by our observation.

On the other hand, for adulthood comorbidity is characteristic, and Prinzmetal is no exception, which we wanted to show, studying the clinical case.

KEY WORDS: prinzmetal angina, vasospasm, ST segment elevation, chronotropic effects, dysregulation

СТЕНОКАРДІЯ ПРИНЦМЕТАЛА В РЕАЛЬНІЙ КЛІНІЧНІЙ ПРАКТИЦІ: МОЖЛИВІСТЬ ХРОНОТЕРАПЕВТИЧНОГО ПІДХОДУ ТА ОБМЕЖЕННЯ КОМОРБІДНОСТІ

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Стенокардія Принцметала (синоніми: вазоспастична стенокардія, варіантна стенокардія) викликається спазмом коронарної артерії, виникає вночі під час сну, у проміжку між серединою ночі і рано вранці та проявляється підйомом сегмента ST на ЕКГ.

Часта «прихильність» нападів до певного проміжку періоду сну дає можливість використовувати у лікуванні пацієнтів хрономедичний підхід, що демонструється нашим спостереженням.

З іншого боку, для дорослого віку характерною є коморбідність, і стенокардія Принцметала не є винятком , що ми також показали , розглядаючи клінічний випадок.

КЛЮЧОВІ СЛОВА: стенокардія Принцметала, вазоспазм, елевація сегмента ST, хронотропія, порушення регуляції

СТЕНОКАРДИЯ ПРИНЦМЕТАЛА В РЕАЛЬНОЙ КЛИНИЧЕСКОЙ ПРАКТИКЕ: ВОЗМОЖНОСТЬ ХРОНОТЕРАПЕВТИЧЕСКОГО ПОДХОДА И ОГРАНИЧЕНИЯ КОМОРБИДНОСТИ

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Стенокардия Принцметала (синонимы: вазоспастическая стенокардия, вариантная стенокардия) вызывается спазмом коронарной артерии, возникает ночью во время сна, в промежутке между полуночью и ранним утром и проявляется подъемом сегмента ST на ЭКГ.

Частая «привязанность» приступов к определенному промежутку периода сна дает возможность использовать в лечении страдающих нею пациентов хрономедицинский подход, что демонстрируется нашим наблюдением.

С другой стороны, для взрослого возраста характерной является коморбидность, и стенокардия Принцметала не является исключением, что мы также хотели показать, рассматривая клинический случай.

КЛЮЧЕВЫЕ СЛОВА: стенокардия Принцметала, вазоспазм, элевация сегмента ST, хронотропность, нарушение регуляции

INTERVIEW DATA

Female, 43 years old, employee at wagons' depot, date of admission: 10.10.12.

Complaints of pain in the heart pressing nature, radiating to the left arm, left shoulder, chin, arising during sleep between 3 and 3,30 am and accompanied by a feeling of anxiety, sweating, severe weakness, shortness of breath when walking fast, recurrent headaches in occipital region, a feeling of disruption of heart rhythm not associated with physical activity. Recurrent pain in the neck and the right upper extremity. Numbness of the 4-5 fingers of the left upper extremity; constant cough in the morning with expectoration of scanty sputum.

She has been suffering from hypertension since 2009. An increase in blood pressure to 170/90 mm Hg is noted. Usual blood pressure - 120/80 mm Hg. She was treated in the outpatient department with antihypertensive drugs taken regularly. She can not specify names of the drugs taken.

In 7.10.12 in the afternoon, after a psychological and emotional load, she felt pain behind the breastbone for the first time, which radiate to the left arm, left scapula, accompanied by sore throat, blackout, and sweating and lasted 15-20 minutes. The ambulance arrived with the squad. No abnormalities were registered on ECG. On 10.08.12 she began to feel these complaints at night but she took no action.

On 10.10.12, she went to a doctor and was sent to the 5-th Central Clinical Hospital for examination and treatment.

According to life history of the patient: frequent childhood respiratory diseases, in 2 or 3 years of age - with bilateral pneumonia. Chronic bronchitis - about 15-20 years. In 2012 received medical treatment for vertebral sided cervico-brachial neuralgia. Tuberculosis, diabetes, viral hepatitis patient denies. She hasn't undergone any operations. Gynecological history: chronic left-sided salpingitis. Family history is not burdened. Allergies to medications, food, purged household chemicals, are absent. She has been smoking 8-10 cigarettes a day for 20 years. No abuse of alcohol.

Objectively, clear consciousness, active position. Overweight, height is 1. 67 m, weight - 80 kg BMI = 34.8 kg/m2, waist circumference of 91 cm, skin is of normal color, the thyroid gland and peripheral lymph nodes were not enlarged visual, painless on palpation. Respiratory system: percussion - sounds over the light lung; auscultation - hard breathing, no wheezing. Circulatory system: percussion - offset to the left border of the relative dullness of 2 cm from the left mammilar line in the 5th intercostal space; auscultation: muffled heart sounds, rhythmic. HR 60/min. Pulse 60 beats/min, regular, satisfactory filling, BP 110/70 mm Hg on both hands (on a background of antihypertensive therapy). No peripheral edema. Tongue is moist, abdomen is soft, painless. Pasternatsky's symptom is negative on both sides. Marked tenderness at paravertebral points in the cervical-thoracic spine. Left humerus is painless, active and passive movements are maintained.

RESULTS OF LABORATORY AND FUNCTIONAL STUDIES

Complete blood count: polycythemia ($4.75x10^{12}$ g/l), leukocytosis (11.6×10^{9} g/l), relative lymphocytosis (44 %). Increased ESR (20 mm/h).

Urinalysis: figures in the normal range.

Biochemical analysis of blood: increased ALT (38 U/L).

Analysis of lipid: hyperlipoproteinemia type 2b according to Fredrickson criteria.

ECG showed sinus rhythm, regular, left ventricular hypertrophy. Heart rate 59 beats/min.

Echocardiography: moderate thickening of the left ventricular (thickness of the posterior wall of the left ventricle 11.34 mm). First degree of mitral regurgitation. Akinesia zones not found, valves are intact. EF – 79 %.

Veloergometry: negative.

Coronary angiography: right type of coronary blood supply. Left coronary artery – the eccentric atherosclerotic plaque up to 20 %

of the distal portions of the trunk. Local concentric atheroma up to 30 % in the middle segment of the left anterior descending artery. Atheroma to 15 % at the mouth of the circumflex artery. Right coronary artery - without visible atherosclerotic lesions.

1st. Holter ECG monitoring (16.10.12): sinus rhythm, average heart rate - 70 beats / min, maximum heart rate - 124 beats / min (at 20:12), minimum heart rate - 49 beats / min on background AV block II stage (Mobitz 2) at 03:27. Circadian index - 1.26. In 03:25-03:29 registered episode of ST elevation by 3 mm, accompanied by the development of AV block of the I stage (maximum PQ 288 ms) in the future with the addition of AV block II stage (Mobitz 2). Episode coincided with an attack in the night, noted in the patient diary.

2nd. Holter ECG monitoring (17.10.12): Against the backdrop of the main sinus rhythm recorded: average heart rate during the day 73 beats/min, at night 61 beats/min, maximum heart rate 109 beats / min at 06:55, minimum heart rate 46 beats / min at 01 41. Circadian index – 1,19; episode of ST segment elevation greater than 2 mm in the night between 1:38-1:44 and 3:21-3:26. In the period following ischemia detected arrhythmias. Singles premature beats (5 in total) on the background of bradycardia (1 episode). Sinus tachycardia, heart rate 104 beats/min (1 episode). AV block I stage and AV block II stage (Mobitz 2) (1 episode 1).

Spondylography: On digital spondylograms thoracic spine in the frontal and lateral projections: Bone-destructive changes are not detected. Right-sided scoliosis with the apex of the arc at the level of Th 7.The initial manifestations of osteochondrosis more in the lower part. Paravertebral soft tissue without features.

At neurology: bilateral muscle-tonic cervico-brachial neuralgia, dorsalgia due to degenerative disc disease, relapsing course, the stage of the protracted deterioration, severe pain.

Consultation of gynecologist: chronic left-sided salpangitis in remission.

CLINICAL DIAGNOSIS

Underlying disease: coronary artery disease. Vasospastic angina. Coronary atherosclerosis (CVG from 19.10.12). Hyperlipoproteinemia type 2b according to Fredrickson's criteria. Transient AV block I stage, II stage (Mobitz 2). Single supraventricular extrasystoles. Arterial hypertension stage II, 2 degree. Hypertensive heart. Risk 3. 1st stage of heart failure, 1st functional class with preserved systolic function.

Comorbidities: COLD. Obesity I degree. Chronic left-sided adnexitis in remission. Osteochondrosis of the cervical-thoracic scoliosis of the thoracic spine, functional failure of joints 0. Bilateral muscular-tonic cervico-brachial neuralgia, dorsalgia recrudescence.

RECOMMENDED TREATMENT

Lifestyle modification

Smoking cessation. Reduction in body weight (diet restriction of animal fats, carbohydrates, salt).Physical activity (therapeutic exercises, jogging, swimming). In the period of remission of osteochondrosis - massage cervical-thoracic spine.

Medication:

- Amlodipine 10 mg at bedtime,
- Nitroglycerin (1tab) under the tongue for relief of pain attack (allowed up to 5 tablets for 5 minutes),
- Atorvastatin 10 mg per day,
- Enalapril maleate 10 mg per day,
- Cardiomagnyl 75 mg per day during the meal.

Planned hospitalization 23.04.13: satisfactory condition. Blood pressure 130 /90 mm Hg, pulse 68 beats/min. Slowing to 2-4 attacks of heart pain per month, reducing the intensity of pain. ECG showed sinus rhythm, regular, HR 73 beats/min deviation of electrical axis of heart to the left. Echocardiography: heart cavity is not an extension, moderate thickening of the walls of the left ventricle (Thickness of posterior wall of left ventricle 11.26 mm), Akinesia zones not found, valves are intact. EF = 79 %. Holter ECG monitoring (23.04.13): circadian index of 1.17. Found: 6 tachycardias, the total duration of 8 minutes 40 second. Single supraventricular arrhythmias. Episodes of ST elevation not detected. Noted a significant positive trend.

Prinzmetal angina usually occurs in adulthood, usually at night, often in women [1], which corresponds to our observation. Present atherosclerotic plaques exceed 30 % of the lumen of the coronary arteries and do not provoke attacks during the day, not counting the very first episode, which, after a demonstration was not repeated. Of the risk

factors spasm, including circadian dysregulation, physical and mental distress, the medication (ephedrine, ergonovine, bromocriptine, 5-fluorouracil, propofol), smoking, cocaine use, our patient had two - circadian dysregulation (circadian index 1, 19), and smoking. Characteristic of the development of attack rhythm disturbances in the form of transient atrioventricular and intraventricular blocks, frequent ventricular arrhythmia of high grade, paroxysmal tachycardia and ventricular fibrillation [2] in our case were atrioventricular block of 1st and 2nd degree. Isolated supraventricular extrasystoles and paroxysmal sinus tachy-cardia. The European Society of Cardiology recommended methods of diagnosis [3] (ECG during an attack , coronary angiography for evaluation of coronary vessels, intracoronary provocative tests for the identification of coronary spasm , Holter ECG monitoring to detect shifts of ST segment), we used coronary angiography and Holter ECG monitoring . Also, following the recommendations of the European Society of Cardiology [3], we have assigned therapy with calcium antagonists and nitrates.

CONCLUSION

Clinical case is interesting primarily by chronotherapeutic approach in the treatment, when the occurrence of spasms around the same time of night sleep (about 3-3:30 am) allowed to assign amlodipine once a day at bedtime with significant positive dynamics in the quality of life and decrease in the frequency of attacks to 2-4 per month with a decrease in pain intensity.

It is important to pay attention to comorbidity with other diseases in the case of Prinzmetal angina (atherosclerosis, obesity, hypertension, low back pain, circadian disorders) that might provoke attacks and aggravate its course and intervention which contributed to a better clinical outcome.

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