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КАРДИАЛГИЯ У БОЛЬНОЙ С АРТЕРИЕЙ LUSORIA: КЛИНИЧЕСКИЙ СЛУЧАЙ

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Chest Pain in the Patient with Arteria Lusoria: A Case Report

Резюме

Самой частой аномалией развития дуги аорты и ее ветвей является аберрантное отхождение правой подключичной артерии — arteria lusoria. Обычно клинически проявляется дисфагией, одышкой или кашлем. **Цель:** обратить внимание практических врачей на необходимость исключения аномалий ветвей дуги аорты, в том числе артерия lusoria, у больных с кардиалгиями неясного генеза. **Клинический случай.** Пациентка, 18 лет, без хронической патологии в анамнезе была госпитализирована с клиникой давящих болей в грудной клетке после эмоционального стресса, длившихся в течение одного часа. На ЭКГ регистрировался синусовый ритм с частотой 50 ударов в минуту, нормальное направление электрической оси сердца, неполная блокада правой ножки пучка Гиса, отрицательный зубец Т в III отведении. После исключения острого коронарного синдрома, тромбоэмболии легочной артерии, при проведении компьютерной томографии органов грудной клетки с контрастированием выявлена аномалия дуги аорты — артерия lusoria. **Заключение.** Артерия lusoria может сопровождаться болями в грудной клетке. У пациентов с кардиалгией неясного генеза необходимо исключать аномалии развития дуги аорты и ее ветвей, в том числе аберрантное отхождение правой подключичной артерии — a. lusoria.

Ключевые слова: *кардиалгия, стенокардия, дифференциальная диагностика, аномалия развития дуги аорты, аберрантная правая подключичная артерия, артерия lusoria, правая подключичная ретроэзофагеальная артерия*

Конфликт интересов

Авторы заявляют, что данная работа, её тема, предмет и содержание не затрагивают конкурирующих интересов

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Abstract

The most common anomaly of the aortic arch and its branches is the aberrant right subclavian artery — arteria lusoria. Usually, it produces dysphagia or dyspnea and chronic coughing. **Our purpose** is to underline that it is necessary to exclude the anomalies of the branches of the thoracic aorta, including arteria lusoria, in the patients with cardialgia of unknown origin. **Clinical case.** An 18-year-old female patient without a previously diagnosed chronic pathology was admitted to a hospital with chest pain after emotional stress for about an hour. The ECG revealed a sinus rhythm with a heart rate of 50 per minute, the normal direction of the electrical axis of the heart, the incomplete right bundle branch block, the negative T wave in the lead III. After excluding ischemic heart disease, acute coronary syndrome, pulmonary embolism, contrast-enhanced chest computed tomography revealed an aortic arch anomaly — a. lusoria. **Conclusion.** A. lusoria may manifest by cardiac pain. In patients with chest pain of unknown origin, it is advisable to include anomalies of the aorta and its branches, including the presence of the lusoria artery, in the range of differential diagnostics.

Key words: *aberrant right subclavian artery, right subclavian retroesophageal artery, arteria lusoria, anomaly of the development of the aortic arch and its branches, cardialgia, chest pain, differential diagnostics*

Conflict of interests

The authors declare no conflict of interests

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BP — blood pressure, CT — computed tomography, ECG — electrocardiogram, ECHO-CG — echocardiography, LV — left ventricle, PE — pulmonary embolism

Introduction

The most common abnormal development of the aortic arch and its branches is the aberrant origin of the right subclavian artery — arteria lusoria (right subclavian retroesophageal artery). Lusoria comes from the Latin expression “lusus naturae”, which means “freak of nature” [1]. This anatomical anomaly was first identified in 1735 by P. Hunauld. Dysphagia associated with it was described by D. Bayford; he defined it as dysphagia lusoria in 1794 [1, 2]. According to major studies, the incidence of this anomaly varies from 0.5 to 2.5% [1]. This anomaly (a. lusoria) accounts for 17% of all cases of the abnormal development of the aortic arch and its branches [1, 2]. This anomaly is often observed in women (55.3–58%) than in men (42–44.7%) [3]. In most cases, a. lusoria is combined with other developmental anomalies of the cardiovascular system (such as truncus bicaroticus, right aortic arch, coarctation of the aorta, patent ductus arteriosus, tetralogy of Fallot, transposition of the great arteries, ventricular and atrial septa defect, aneurysms, hypoplastic left heart, congenital mitral stenosis, pulmonary valve stenosis, arterioesophageal fistula, and genetic syndromes — Down, Edwards, DiGeorge) [1].

A. lusoria is a consequence of impaired embryonic development (Fig. 1) [1, 4].

In patients with a. lusoria, four arteries branch from the aortic arch in the following sequence: right common

carotid artery, left common carotid artery, left subclavian artery, and more distal — aberrant right subclavian artery. The brachiocephalic trunk, which normally branches from the aorta first and is divided into right common carotid and right subclavian arteries, is absent. A. lusoria branches from the proximal part of the descending aorta in the left chest and goes up and to the right. . In 80-84% of cases, the aberrant right subclavian artery is situated behind the esophagus, in 4.2-5% of cases — in front of the trachea, in 12.7-15% — between these two organs. This vessel can be damaged during various surgical interventions, including tracheostomy, thyroid surgery, transcardial interventions on coronary vessels.

Sixty percent of patients have a. lusoria dilated at the point of branching. This conical dilation of the proximal part of the aberrant subclavian artery near its branching from the aorta is called Kommerell diverticulum, "lusoria diverticulum", or "lusoria root". It was described by B.F. Kommerell in 1936. It occurs in 14.9-60% of patients with a. lusoria.

According to the classification by Adachi and Williams, there are four types of a. lusoria: 1) G-1 type, when a. lusoria branches from the distal part of the aortic arch, other branches are not changed. 2) CG-1 type, when a. lusoria branches from the distal part of the aortic arch, left vertebral artery branches directly from the aortic arch; 3) H-1 type, when a. lusoria branches from the distal part of the aortic arch, there is a truncus bicaroticus; and 4) N-1 type, when there is a mirror image of type G-1 with the right aortic arch and left subclavian artery similar to a. lusoria (Fig. 2) .

The average age of patients diagnosed with a. lusoria, is 49.9 years: 54 years for women, 44.9 years for men. Between 60% and 80% of patients have a. lusoria with no clinical symptoms. Clinical manifestations may develop in three cases:

1. If a. lusoria runs between behind the esophagus and trachea and in the front of truncus bicaroticus
2. If there is an aneurysm of a. lusoria
3. In the elderly, due to atherosclerotic lesions or fibromuscular dysplasia of arteries

When a. lusoria runs behind the esophagus, it can compress it, which is manifested by dysphagia (dysphagia lusoria). Dysphagia is the most common symptom; it develops in 71.2% of patients. It is characterized by difficulty in swallowing solid food.

In younger patients, a. lusoria can be manifested by frequent respiratory infections, respiratory failure due to trachea compression.. Shortness of breath is observed in 18.7% of patients. Less common signs are retrosternal chest pain (17.0%), cough (7.6% due to tracheal compression), weight loss (5.9%), epigastric pain, back pain, numbness of the right upper limb, torticollis, neck enlargement, hoarseness. The clinical presentation of a. lusoria can resemble that of pericarditis, endocarditis, aortic dissection.

A. lusoria can be diagnosed by chest x-ray: with the esophagus contrasting with barium, there is a rounded localized lesion in the lateral view, continuously connected with the upper edge of the aortic arch with pulsation (Fig. 3). A. lusoria is diagnosed mainly by multisite computed tomography (Fig. 4) and magnetic resonance angiography. Sometimes it is diagnosed with angiography

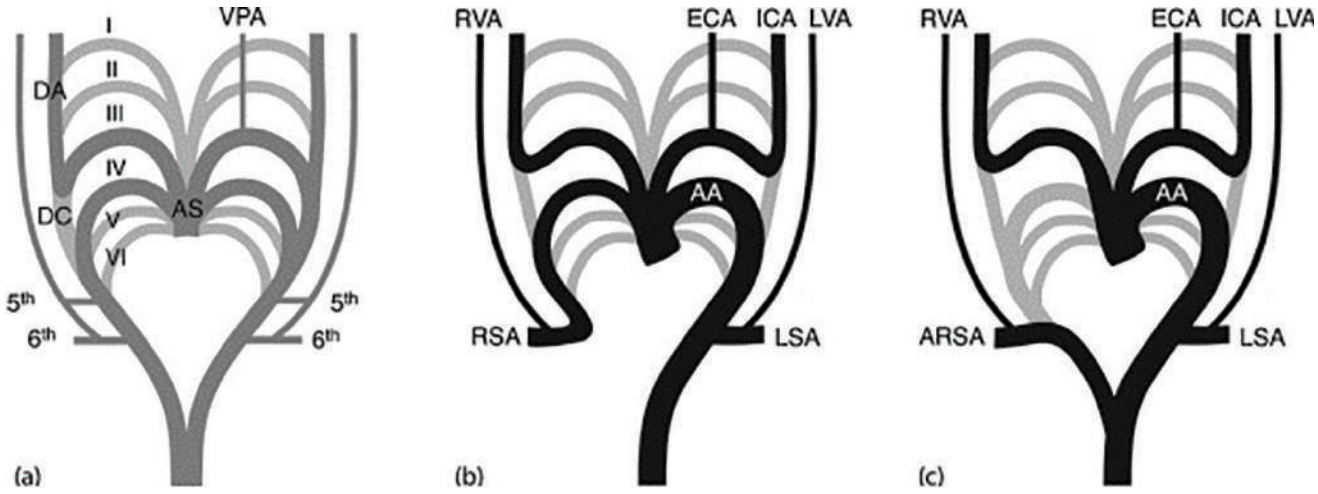

Figure 1. *Development of arteria lusoria; a: embryological development of the aortic arches; b: normal adult situs; c: arteria lusoria situs. I: first branchial arch. II: second branchial arch. III: third branchial arch. IV: fourth branchial arch. V: fifth branchial arch. VI: sixth branchial arch. 5th: fifth cervical intersegmental artery. 6th: sixth cervical intersegmental artery. AA — aortic arch, AS — aortic sinus, ARSA — aberrant right subclavian artery, DA — dorsal aorta, DC — ductus caroticus. ECA — external carotid artery, ICA — internal carotid arter, LSCA — left subclavian artery, LVA — left vertebral artery, RSCA — right subclavian artery, RVA — right vertebral artery, VPA — ventral pharyngeal artery*

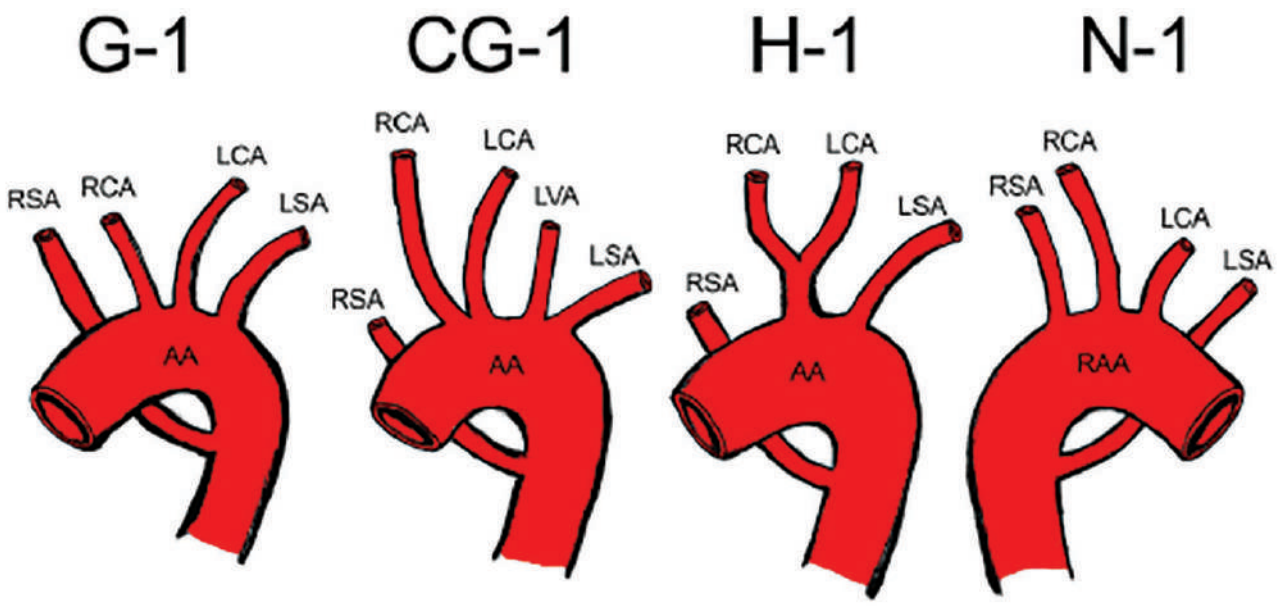

Figure 2. *Variants of anomalies of the right subclavian artery according to the Adachi-Williams classification. AA: aortic arch; RAA: right aortic arch; RSA: right subclavian artery; RCA: right common carotid artery; LCA: left common carotid artery; LVA: left vertebral artery; LSA: left subclavian artery (1)*

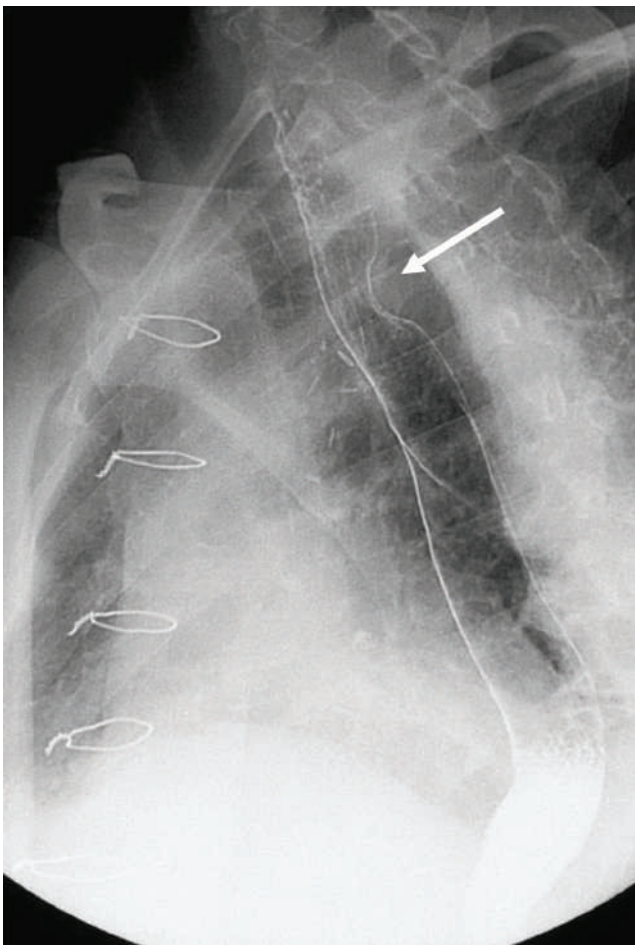

Figure 3. *X-ray of the chest organs in lateral projection. The aberrant right subclavian artery (arteria lusoria) deflects the contrasted esophagus, shown by the arrow. Made by the doctor Kemezh Yu.V.*

and surgery. Due to the predominantly asymptomatic course of a. lusoria, its life-time diagnosis is quite rare; it is often found during autopsy.

Most asymptomatic patients require no treatment. However, the probability of death and rupture in patients with an aneurysm of a. lusoria is 44-57%, which requires more aggressive management. All patients with severe clinical symptoms and complications are subject to surgical treatment of a. lusoria. Endovascular approaches are possible. With moderate dysphagia, slow and thorough chewing of food is recommended. There are no specific recommendations for the diagnosis and surgical treatment of patients with this anomaly.

Case history, clinical, laboratory and X-ray examination data

A 18-year female patient, with no previously diagnosed chronic disease, was hospitalized with a clinical presentation of retrosternal pressing pains, without irradiation, which developed after emotional stress lasting about one hour. There were no data for elevated blood pressure (BP) during hospitalization and in history, no symptoms or signs of heart failure, anemia. Electrocardiogram (ECG) demonstrated sinus rhythm with heart rate of 52 per minute, normal QRS axis, negative T wave in lead III (Fig. 5). Concentration of creatine kinase MB (mass fraction) was 3.0 μg/l (normal 2.0-7.2), troponin I in blood <0.01 ng/ml (normal range <0.01 ng/ml), low density lipoprotein cholesterol — 3.36 mmol/l, D-dimer — 542 μg/l (normal range 64-550 μg/l). Chest

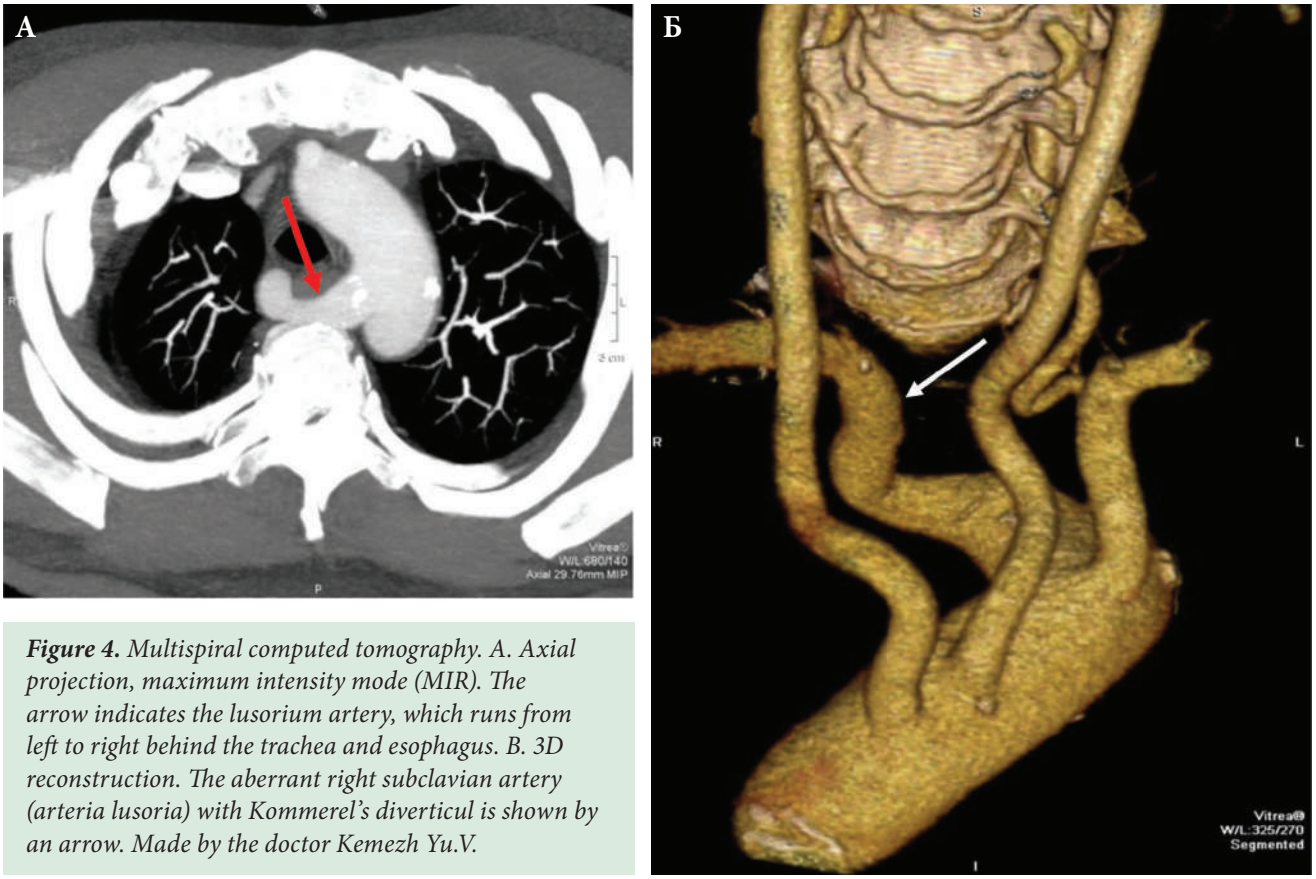

Figure 4. *Multispiral computed tomography. A. Axial projection, maximum intensity mode (MIR). The arrow indicates the lusorium artery, which runs from left to right behind the trachea and esophagus. B. 3D reconstruction. The aberrant right subclavian artery (arteria lusoria) with Kommerel's diverticul is shown by an arrow. Made by the doctor Kemezh Yu.V.*

Figure 5. *Electrocardiogram at the admitting*

Figure 6. *Multispiral computed tomography, 3D resconstruction. The aberrant right subclavian artery (arteria lusoria) is shown by an arrow*

x-ray, ultrasound of the vessels of lower limbs, as well as ultrasound of kidneys and retroperitoneal space and esophagogastroduodenoscopy: within normal.

During echocardiography (ECHO-CG), normal myocardial contractility, normal sizes and volumes of cardiac cavities, pulmonary artery pressure and valve function were observed. LV ejection fraction was 55%, maximum aortic valve pressure gradient — 15 mm Hg, and peak aortic valve velocity — 1.82 m/s. 24-hour ECG monitoring revealed sinus rhythm with an average rate of 68 bpm, minimum — 44 bpm, maximum — 118 bpm; 4 supraventricular extrasystoles. No pauses, ventricular extrasystoles or ST segment dispositions were registered. During cardiac stress test, the patient developed pressing chest pain that lasted for 5 minutes, without changes on ECG, exercise tolerance was moderate (100 W), BP response of normotonic type, no rhythm or conduction disturbances. Chest multislice computed tomography (CT) revealed aortic arch anomaly — a. lusoria (Fig. 6).

Discussion

Chest pain is one of the most common reasons for seeking medical attention. The main causes of heartburn are disease of the heart, blood vessels, respiratory organs, gastrointestinal tract, musculoskeletal system, nervous system, mammary glands, blood system, etc. (Table 1).

Table 1. *The diseases with cardiac pain*

Causes	Nosology
1. Heart pathology	• Myocardial infarction *, acute coronary syndrome *
	• Stable angina
	• Pericarditis *
	• Myocarditis
	• Infective endocarditis (thromboembolism in the coronary arteries by pieces of vegetation, shielding of the orifices of the coronary vessels, decreased oxygen delivery in severe aortic regurgitation) *
	• Congenital and acquired heart defects (aortic stenosis, insufficiency; mitral stenosis, coarctation of the aorta, etc.).
	• Cardiomyopathy (hypertrophic, etc.)
	• Arterial hypertension
	• Arrhythmias
	• Coronaryitis (with polyarteritis nodosa, Kawasaki disease and other systemic vasculitis)
	• Spasm of the coronary arteries (in cocaine or amphetamine addicts)
	• Mitral valve prolapses
2. Vascular pathology	• Aortic dissecting aneurysm *
	• Pulmonary embolism*
	• A. lusoria and other developmental anomalies of the aorta and its branches

3. Pathology of the respiratory system	• Pleurisy, mediastinitis • Pneumothorax *, pneumomediastinum * • Pneumonia • Lung tumor
4. Pathology of the gastrointestinal tract	• Reflux esophagitis • Spasm of the esophagus • Ruptured esophagus * • Hernia of the esophageal opening of the diaphragm • Mallory-Weiss syndrome • Peptic ulcer • Cholecystitis • Pancreatitis • Biliary colic
5. Pathology of the musculoskeletal system	• Costochondritis (Tietze's syndrome) • Rib fracture • Dorsopathy of the cervical spine • Osteoarthritis of the shoulder joints and spine • Spasm / injury of intercostal muscles • Anterior scalene muscle syndrome (Naffziger syndrome) • Pectoralis syndrome (Wright's syndrome) • Subacromial bursitis • Tendonitis of the supraspinatus and deltoid tendons • Rheumatic polymyalgia • Dermatomyositis • Myalgia • Myogelosis • Tumors of the chest wall • Bone metastases
6. Pathology of the nervous system	• Intercostal neuralgia • Damage to intercostal nerves during thoracotomy, thoracoscopy • Neurinoma • Spinal cord compression • Herpes zoster • Pleurodynia
7. Diseases of the mammary glands	• Mastopathy • Mammary cancer
8. Pathology of the blood system	• Anemia • Erythremia
9. Psychogenic	• Anxiety disorders • Depressive disorders
10. Other	• Sappho Syndrome (SAPHO) • Mondor's disease

Note: * — conditions requiring immediate hospitalization of the patient

Description of chest pain typical for different conditions

Myocardial infarction

- **Type:** pressing, constricting; intense pain
- **Triggers** — stressful event, physical activity
- **Localization:** behind the sternum or in the left half of the chest, in the epigastrium
- **Irradiation:** into the arm (usually along the medial side of the forearm down to the little finger), interscapular region, neck, or lower jaw
- **Associated symptoms:** cold clammy sweat, shortness of breath, sometimes nausea or vomiting, arterial hypotension, unusual weakness, feeling faint
- **Duration:** more than 20 minutes.
- **Treatment:** narcotic analgesics

Angina

- **Type:** pressing, constricting; heavy feeling, sometimes aching or burning (however, one should keep in mind that pains of any type can be anginal)
- **Triggers:** pain during physical or psychoemotional stress; the pain ceases when the stress stops. Pain can be triggered by a large meal, exposure to the cold, wind, or other factors that increase heart rate (mismatch between myocardial oxygen demand and oxygen delivery).
- **Localization:** behind the sternum or in the left half of the chest; when asked to show the place where the pain is, the patient demonstrates typical Levine's sign (a clenched fist or palm held over the sternum or across the anterior chest wall)
- **Irradiation:** into the shoulder, arm (both left, often along the medial side of the forearm down to the little finger), interscapular region, neck, lower jaw, rarely — epigastric region
- **Associated symptoms:** inability to breathe deeply
- **Duration:** 5 minutes for stable angina; 5-10 minutes for unstable angina
- **Treatment:** pain eases at rest or with the help of nitrates

Pericarditis

- **Type:** pain is not intense, heavy feeling, there may be a sharp stabbing pain
- **Triggers:** pain intensifies in a horizontal position, during inspiration (like pleural pain), during coughing, raising legs, swallowing or extending neck; becomes less when bending forward
- **Localization:** pain can be behind the sternum, in the left side of the chest, in the neck and abdomen
- **Irradiation:** pain can irradiate along the phrenic nerve to the upper abdomen (sometimes similar to cholecystitis, pancreatitis), left shoulder blade, shoulder, neck
- **Duration:** constant, long-term
- **Associated symptoms:** often after a cold, viral infection (Coxsackie viruses A and B, echovirus, adenovirus, human immunodeficiency virus); less common — oncological disease (breast cancer, lung cancer, lymphoma), uremia, radiation, acute myocardial infarction, connective tissue diseases (systemic lupus erythematosus, rheumatoid arthritis), trauma; rare — tuberculosis, bacterial infection, drug-induced effect (procainamide, isoniazid, phenytoin), and inflammatory bowel diseases

Angina syndrome

Pain in angina syndrome is no different in its characteristics from pain in angina.

Angina syndrome is often observed with affected heart valves (aortic stenosis, insufficiency), hypertrophic cardiomyopathy (especially idiopathic hypertrophic subaortic stenosis), arterial hypertension. The reason is left ventricular (LV) myocardial hypertrophy, which is associated with increased myocardial oxygen demand. Also, due to the obstruction of the aortic opening in cases of aortic stenosis, LV outflow tract in idiopathic hypertrophic subaortic stenosis, and blood regurgitation into the LV cavity in diastole, oxygen delivery to myocardium decreases.

During auscultation in cases of aortic stenosis, a rough systolic murmur is heard in the second intercostal space to the right of the sternum. It spreads to neck vessels accompanied by a weakening and slowing down of the increase in the pulse wave on carotid arteries and by a sharp weakening or the absence of tone II. In cases of idiopathic hypertrophic subaortic stenosis, the sound at the Erb's point is conducted along the left edge of the sternum. In cases of aortic insufficiency, diastolic murmur in the second intercostal space to the right of the sternum is conducted to the apex.

Arrhythmia

Pain during arrhythmia is acute, located in precordial region, irradiates to the throat, starts and ends with an arrhythmia attack.

Mitral valve prolapse

Pain accompanying mitral valve prolapse is mild, often long-term, in the left side of the chest.

Aortic dissection and aneurysm

- **Type:** pain develops suddenly, quickly reaches its maximum, is tearing or ripping
- **Localization:** pain is localized in the chest or back (depending on the site of dissection)
- **Specific features:** often pulses together with heartbeats. The pain is most intense at its onset. Asymmetry of BP values on arms is typical.

- **Irradiation:** pain can irradiate into the abdomen, legs, and move to the back.
- **Duration:** lasts for hours, does not depend on body position or breathing.
- **Treatment:** high doses of narcotic analgesics.

Pulmonary embolism (PE).

- **Type:** dull pain, heavy feeling with massive PE; tearing, rubbing pain, sometimes resembles angina in cases of pulmonary embolism of small branches.
- **Onset:** acute
- **Localization:** severe pain in the center of the chest, behind the sternum — with massive PE; in lateral sections with deep breathing (of pleural nature) with PE of small branches.
- **Associated symptoms:** pain is associated with acute shortness of breath, tachycardia; the patient feels anxiety, sweats, hemoptysis is possible.
- **Duration:** long-term
- **Risk factors:** Main risk factors for venous thromboembolism: long period of strict bed rest, immobilization of extremities, surgery.

Pleuritis

- **Type:** stabbing, sharp, tearing, changing with breathing.
- **Triggers:** pain intensifies with deep breathing and coughing.
- **Localization:** unilateral with irradiation into the shoulder or epigastric region.
- **Associated symptoms:** cough, fever due to lung infection.
- **Specific features:** eases in a position of the body bending towards the affected side.

Pneumothorax

- **Type:** sharp, tearing, changing with breathing
- **Onset:** sudden
- **Duration:** long-term
- **Localization:** unilateral, in the lateral parts of the chest
- **Associated symptoms:** pain is associated with acute shortness of breath, tachycardia. The disease develops spontaneously or with underlying bronchial asthma, pulmonary emphysema, tuberculosis, cystic fibrosis, sarcoidosis, blunt or penetrating chest trauma.

Pneumonias

Sharp long-term pain associated with breathing, shortness of breath, fever with chills, cough, either dry or wet. Unilateral pain irradiating into the shoulder or epigastric region.

Chest diseases

Costochondritis, Tietze syndrome — inflammation of sternocostal joints. Costochondritis is a common cause of chest pain in childhood and adolescence and accounts for 10-30% of all chest pain at this age. Most often occurs between 12-14 years. Pain is usually of moderate intensity, stabbing or dull, one-sided, short-term (from a few seconds) to long-term (several days). The patient can accurately point with a finger at the site of the pain, which is most often located at the level of the 2nd-3rd sternocostal joint. Pain is not associated with movements. Local tenderness is observed when pressing on the corresponding parts of the chest. Pain decreases with the use of non-steroidal anti-inflammatory drugs (NSAIDs).

Radicular chest pain

With a herniated disc in the cervical spine, pain can irradiate along the radial nerve. Pain becomes intense when walking, when moving arms or head.

Intercostal pain often develops after thoracic surgery, especially when the intercostal nerves are damaged by thoracoscopy.

Herpes zoster is a common cause of chest pain. Pain may start several days before the skin manifestations. Postherpetic neuralgia can last up to several months or years.

Epidemic pleurodynia (Bornholm disease, or epidemic myalgia) is caused by Coxsackie virus B; and often manifests as interosseous neuralgia. Pain is acute, severe, paroxysmal over lower ribs or in the sub-sternal region.

Esophageal spasm

- **Type:** pain in cases of esophageal spasm can be similar to that typical for angina — compressive chest pain
- **Irradiation:** pain can irradiate from the upper part of the epigastrium to the chest region, upper chest, upper limbs
- **Treatment:** taking nitroglycerin brings quick relief, similar to angina. Differential diagnosis, in this case, is based on the proven absence of exertional angina and the identified relationship with food intake.

Reflux esophagitis

- **Type:** burning pain, rarely very severe. It may be dull, similar to angina.
- **Triggers:** pain increases in the supine position or when bending over, after taking aspirin or other NSAIDs, drinking alcohol, spicy, fried foods
- **Localization:** precordial and epigastric region
- **Associated symptoms:** pain is usually not associated with profuse sweating or shortness of breath,

is often accompanied by heartburn, dysphagia, belching undigested food, weight loss
- **Duration:** pain in cases of reflux esophagitis lasts from a few minutes to several hours
- **Treatment:** decreases when taking antacids, water, hot beverages, in sitting position

Ruptured esophagus

Excruciating sharp pain, often after vomiting, followed by fever, shock; long-term; in the precordial region with irradiation to the back.

Hiatus hernia

Typical feature is development and aggravation of pain in the supine position.

Peptic ulcer
- **Localization:** in the epigastrium or behind the sternum
- **Triggers:** pain arises 1-1.5 hours after eating and decreases a few minutes after taking antacids or milk.

SAPHO syndrome

SAPHO syndrome (SAPHO — Synovitis, Acne, Pustulosis, Hyperostosis and Osteitis) is a rare autoinflammatory disease characterized by a correlation between neutrophilic skin lesions and chronic osteomyelitis. The age of onset ranges from childhood to elderly; on average, between 30 and 40 years. Inflammation in adults develops mainly in the anterior chest wall, as well as in the spine, less often — in the lower jaw and ilium. It may be accompanied by chest pain or swelling of the affected area. There is no clear description of chest pain in this syndrome.

Mondor's disease

Mondor's disease is characterized by thrombophlebitis of the superficial lateral veins of the chest. There is no clear description of chest pain in this syndrome. There is no clear description of chest pain in this syndrome.

Psychogenic chest pain
- **Type:** aching or pressing, rarely intense
- **Triggers:** not related to physical activity, undulating. May be associated with fatigue or periods of intense emotional stress
- **Localization:** behind the sternum or in the apex of the heart
- **Duration:** there are two types: acute short-term, "piercing", does not allow drawing a breath, or long-term (more than 30 minutes), aching, sometimes almost constant, not related to physical exertion

Differential diagnosis

The primary goal of diagnosis in patients with chest pain is to identify or exclude coronary heart disease, dissecting aortic aneurysm and PE. In cases of acute, persistent pain, one should determine whether the patient is in danger of shock, circulatory arrest, or acute respiratory failure, and should start appropriate intensive therapy, if required. Then the differential diagnosis may be performed.

Considering newly diagnosed anginal pain in the described patient, as well as the connection with emotional overstrain and duration of the attack, a differential diagnostic search was carried out to exclude coronary heart disease, acute coronary syndrome, pulmonary embolism, and congenital anomalies of the cardiovascular system. CT angiography of the thoracic aorta revealed a developmental anomaly of the aortic arch — an aberrant right subclavian artery that manifested as heartburn in the 18-year-old patient.

A. lusoria is usually manifested by dysphagia (in 71.2% of patients) and shortness of breath (in 18.7%), less common — by cough (in 7.6%), loss of body weight (in 5.9%), even less common — pain in the epigastrium, back, numbness in the right upper limb [1, 5]. Retrosternal pain syndrome that led to the hospitalization in the described patient is observed in 17% of patients [5].

Conclusion

It is reasonable to include anomalies of the aorta and its branches, including arteria lusoria, in the range of differential diagnosis in patients with chest pain of unknown origin, after excluding common diseases. Timely diagnosis is important to prevent the threat of rupture of the aneurysm of this vessel. Knowledge of the anatomical variants of aortic arch branches minimizes the risk of intraoperative complications and improves the patient's prognosis.

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