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RETURNING TO THE QUESTION OF THE DIVERSITY OF CLINICAL MASCS IN AORTIC ANEURYSM DISSECTION

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Abstract

Acute aortic dissection is often referred to as the «grand masquerade» due to the variety of clinical manifestations. Since clinical manifestations often include symptoms and signs associated with other diseases, such as acute coronary syndrome, cardiac arrhythmia, pulmonary embolism and stroke, the initial misdiagnosis of aortic dissection occurs in up to 34 % of cases.

We present a clinical case of a 54-year-old man with hypertension, whose clinical symptoms include chest pain and lower jaw pain combined with transient neurological symptoms and atrial fibrillation.

Transthoracic echocardiogram revealed dilatation of the ascending aorta and arch, membrane dissection in the ascending aorta. CT scan of the thoracic and abdominal aorta with contrast: Stanford type A and B aortic dissection.

The patient underwent the Bentall-de Bono procedure at the first stage with a positive effect.

Thus, timely differential diagnostics and instrumental studies improve clinical outcomes in aortic dissection.

Keywords: *aortic aneurysm dissection, clinical manifestations.*

Introduction

The incidence of aortic dissection is estimated to be 5 to 30 cases per million people per year, with men being more commonly affected [1].

This is in stark contrast to acute myocardial infarction, which accounts for approximately 4,400 cases per million people per year. Aortic dissection accounts for 3 out of every 1,000 emergency department visits related to acute chest, back, or abdominal pain. This condition mainly affects people between the ages of 40 and 70, with most cases occurring in patients between the ages of 50 and 65. Approximately 75 % of dissections occur in this age range, which highlights age as a key risk factor.

While men are 3 times more likely to suffer from aortic dissection than women, women often seek help in the later stages of the disease and have worse outcomes [2].

Every hour of delay in the diagnosis of acute aortic dissection is associated with a 1 % increase in mortality. However, in half of the cases, the diagnosis is made more than 24 hours after symptom onset. The clinical manifestations of this condition can be varied: from pain in the chest, back, abdomen or extremities to fainting, focal neurological disorders, and in some cases, shock or cardiac arrest [3].

The Stanford classification is divided into two groups, A and B, depending on whether the ascending aorta is involved. The Stanford type A aortic dissection involves the ascending aorta and/or aortic arch and has a higher mortality rate and usually requires primary surgical treatment [4]. The dissected flap may extend antegrade or retrograde and lead to a number of life-threatening complications, including acute aor-

tic regurgitation, myocardial ischemia, cardiac tamponade, acute stroke or malperfusion syndromes. The initial symptoms of aortic dissection are very varied and have masks of many diseases, which often puts the doctor in a difficult position. High mortality, in turn, requires making operative optional decisions. We present a case of Stanford type A dissecting aortic aneurysm with clinical symptoms of pain in the chest and lower jaw in combination with transient neurological symptoms and atrial fibrillation.

Case report

A 54-year-old man has been admitted with complaints of burning chest pain, jaw pain, dizziness, headaches, blurred vision, numbness of the right upper and lower extremities. These symptoms arose within 3 days, on the last day he noted an increase in blood pressure to 226/120 mmHg. From the anamnesis: arterial hypertension for 3 years with a maximum increase in pressure up to 230/110 mmHg. Regularly takes a fixed combination of perindopril/indapamide/amlodipine (10 mg/2.5mg/5 mg). Physical examination revealed cyanosis of the lips, irregular heart rhythm with a heart rate of 200-115 beats per minute, blood pressure 130/80 mmHg. The neurological status is presented by dizziness, tongue deviation to the right, decreased strength in the right lower limb, right-sided hemihypesthesia, as well as positive Barre and Romberg tests. These symptoms were relieved within 12 hours.

The initial electrocardiogram: Paroxysmal form of atrial fibrillation with a heart rate of 200-120 beats per minute. ST segment depression in anterolateral leads (Image 1).

Image 1. Paroxysmal form of atrial fibrillation with a heart rate of 200-120 beats per minute. ST segment depression in anterolateral leads.
Compiled by the authors

Sinus rhythm was restored by medical cardioversion with intravenous amiodarone 300 mg. CT scan of the head without contrast enhancement did not reveal ischemic changes, intracranial hemorrhages, or space-occupying lesions. High-sensitivity Troponin T was measured twice (upon admission and 3 hours later), both results were below reference values. Genogram, liver function tests and creatinine level were normal, but there was an increase in the level of C-reactive protein (121 mg/L) and D-dimer (1.91 mg/L).

Transthoracic echocardiogram: Dilatation of the ascending aorta to 4.3 cm (index 0.25 cm/m^2), grade 1 aortic valve regurgitation. In the aorta, from the aortic valve cusps to the ascending aorta and arch, intimal detachment is determined. No left ventricular wall motion abnormalities were detected. Conclusion: Stanford type A aortic dissection (Image 2 and Image 3).

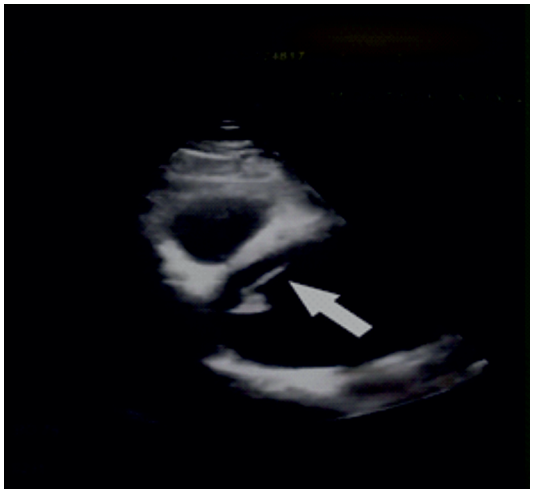

Image 2. Transthoracic echocardiogram, 2D image, parasternal long-axis view showing aortic dilation and membrane dissection beginning at the aortic valve cusps.
Compiled by the authors

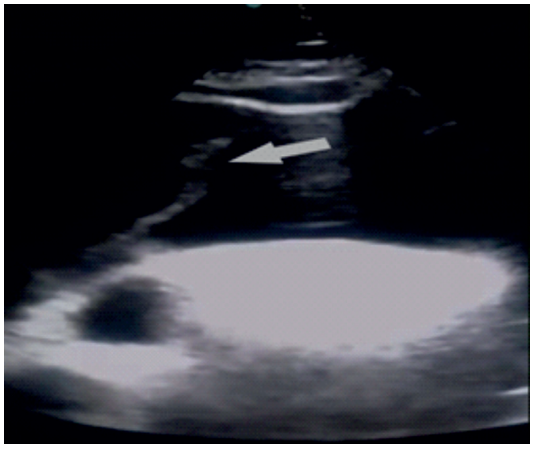

Image 3. Transthoracic echocardiogram, 2D image, suprasternal view showing dilatation of the ascending aorta and arch, membrane dissection in the ascending aorta.
Compiled by the authors

CT angiography of the thoracic and abdominal aorta with contrast: the dissected flap extends from the aortic valve cusps to the descending aorta (Image 4).

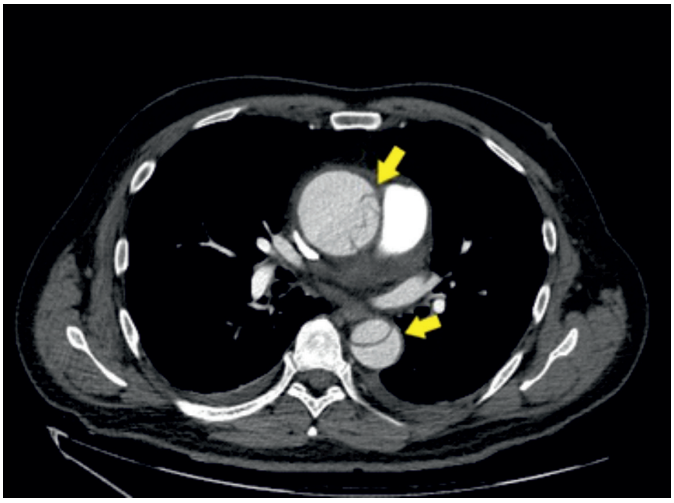

Image 4. This contrast-enhanced early arterial phase CT image shows that the dissected flap extends from the aortic valve cusps to the descending aorta.
Compiled by the authors

The CT angiography 3D reconstruction reveals a dissecting aneurysm involving both the ascending and descending aorta throughout its entire length, extending to the left common iliac artery (Image 5). Conclusion: Stanford type A and B aortic dissection.

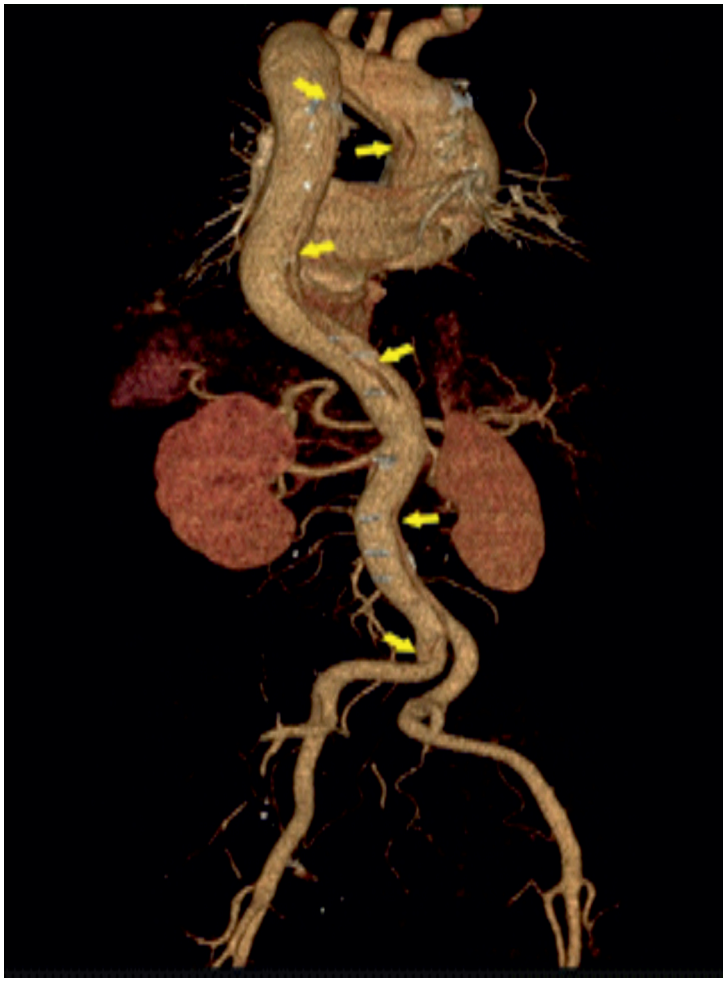

Image 5. 3D reconstruction of CT angiography reveals a dissecting aneurysm, involving both the ascending and descending aorta throughout its entire length, extending to the left common iliac artery (type A and B according to the Stanford classification).
Compiled by the authors

After examining the patient by a cardiac surgeon and confirming the diagnosis of total aortic dissection, transfer to a vascular surgical center for surgical intervention was recommended. At the first stage, the patient underwent a Bentall-de Bono procedure (replacement of the ascending aorta with a valve-containing conduit with reimplantation of the coronary artery ostia). The postoperative period was uneventful and the patient was safely discharged.

Discussion

Sudden pain was the most common presenting symptom in the International Registry of Acute Aortic Dissection study [5]. Anterior chest pain is more commonly associated with type A acute aortic dissection, whereas patients with type B dissection more often complain about back or abdominal pain [6; 7]. The clinical manifestations of the two types of aortic dissection may frequently overlap. Pain may migrate from its point of origin to other sites, following the dissection path as it spreads through the aorta [8]. Clinical records of 102 consecutive patients with aortic dissection showed that thirty patients had initial neurological symptoms (29 %). Neurological symptoms were associated with ischemic stroke (16 %), spinal cord ischemia (1 %), ischemic neuropathy (11 %), and hypoxic encephalopathy (2 %). Other common symptoms were syncope (6 %) and seizures (3 %). In half of the patients, neurological symptoms were transient. Neurological symptoms are not necessarily associated with increased mortality [9]. Approximately 11.4 % of cases with aortic dissection were found to have cardiac arrhythmias in a retrospective study

[10]. Paroxysmal attacks of sympathetic hyperactivity and type A aortic dissection, manifested by atrial fibrillation, have been described. [11]. Malperfusion refers to obstruction of the aortic branches from the dissection flap, causing ischemia to other areas of the body. In patients with aortic dissection, dynamic obstruction occurs as a result of occlusion of the suppressed true lumen of the aorta by an enlarged and compressed false lumen. As a result, malperfusion syndrome develops, which is manifested by various clinical syndromes, including transient neurological ones, as well as arrhythmias such as atrial fibrillation. Moreover, type A aortic dissection can cause coronary malperfusion without extension of the dissection to the coronary arteries [12]. In addition, in our patient, hypertension itself is a risk factor for both aortic dissection and atrial fibrillation, causing paroxysmal or chronic events. The chosen first stage of the Bentall-de Bono procedure is based on recommendations developed for the treatment of dilated aorta with concomitant surgery, as well as on recent publications [13; 14] and avoids harmful events in the aortic root, such as dilatation (> 3 mm/year), reoperation, aortic regurgitation and pseudoaneurysm [15].

Since the patient's aortic dissection also extends to the area of the left common iliac artery, the next stage is planned to install a stent graft to repair the aortic dissection in the descending section [8].

Conclusion

In conclusion, we presented a case report of a patient who along with chest pain, had masks of the initial clinical symptoms of dissecting aortic aneurysm, including transient neurological symptoms and atrial fibrillation. Such clinical symptoms resulting from malperfusion syndrome require differential diagnosis with acute coronary syndrome, stroke, abdominal diseases, and arterial occlusion of the lower extremities. It is no coincidence that acute aortic dissection is often called the “great masquerade” because it often mimics other conditions, mainly due to malperfusion syndromes. Timely differential diagnosis and instrumental studies improve clinical outcomes in aortic aneurysm dissection.

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К ВОПРОСУ О МНОГООБРАЗИИ КЛИНИЧЕСКИХ МАСОК ПРИ РАССЛОЕНИИ АНЕВРИЗМЫ АОРТЫ

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Аннотация

Острое расслоение аорты часто называют «большим маскарадом» из-за разнообразия клинических проявлений. В связи с тем, что клинические проявления часто включают симптомы и признаки, связанные с другими заболеваниями, такими, как острый коронарный синдром аритмии сердца, тромбоэмболия легочной артерии и инсульт, первоначальный ошибочный диагноз при расслоении аорты встречается почти в 34 % случаев.

Представляется клинический случай с 54-летним мужчиной с гипертонией, у которого клинические симптомы включают боль в груди и в нижней челюсти в сочетании с преходящими неврологическими симптомами и мерцательной аритмией. Трансторакальная эхокардиограмма выявила расширение восходящей аорты и дуги, мембрану расслоения в восходящей аорте.

Компьютерная томография грудной и брюшной аорты с контрастированием: расслоение аорты типа А и В по Стэнфорду.

Пациенту на первом этапе проведена операция Бенталл-де Боно с положительным эффектом.

Таким образом, своевременное проведение дифференциальной диагностики и инструментальных исследований улучшает клинические результаты при расслаивающей аневризме аорты.

Ключевые слова: *расслаивающаяся аневризма аорты, клинические проявления.*

АОРТА АНЕВРИЗМАСЫНЫҢ ДИССЕКЦИЯСЫНДАҒЫ КЛИНИКАЛЫҚ МАСКАЛАРДЫҢ ТУРАЛЫ СҰРАҚҚА ОРАЛУ

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Аңдатпа

Жедел аорта диссекциясы клиникалық көріністердің әртүрлілігіне байланысты жиі «ұлы маскарад» деп аталады. Клиникалық көріністер жиі жедел коронарлық синдром, жүрек аритмиясы, өкпе эмболиясы және инсульт сияқты басқа аурулармен байланысты белгілер мен белгілерді қамтитындықтан, аорта диссекциясының бастапқы қате диагнозы 34 % жағдайда кездеседі.

Біз гипертензиямен ауыратын 54 жастағы ер адамның жағдайын ұсынамыз, оның клиникалық симптомдары өтпелі неврологиялық симптомдармен және жүрекшелердің фибрилляциясымен байланысты кеуде және жақ аймағындағы ауырсынуды қамтиды.

Трансторакальды эхокардиограммада көтерілетін аорта мен доғаның кеңеюі, көтерілу қолқасында мембраналық диссекция анықталды.

Контрасты бар кеуде және құрсақ қолқасының компьютерлік томографиясы: Стэнфорд типті А және В қолқа диссекциясы.

Бірінші кезеңде науқасқа оң нәтиже берген Бенталл-де Боно операциясы жасалды.

Осылайша, уақытылы дифференциалды диагностика және аспаптық зерттеулер аорта аневризмасын диссекциялаудағы клиникалық нәтижелерді жақсартады.

Түйін сөздер*: аорта аневризмасының диссекциясы, клиникалық көріністері.*

АВТОРЛАР ТУРАЛЫ

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