UDK 616.132-007.251
COBISS.SR-ID 120242441

ISSN 2466-2992 (Online) (2023) br. 1, p. 25-29

ACUTE AORTIC DISSECTION INITIALLY PRESENTED AS A COMA

AKUTNA DISEKCIJA AORTE INICIJALNO PREZENTOVANA KAO KOMA

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Summary: Acute aortic dissection is an uncommon disorder which can have fatal results in the event of treatment delay or misdiagnosis. This case examines an 87-year-old woman presenting with coma. She was referred to the emergency room with clinical suspicion of coma. However, she was later diagnosed with acute aortic dissection and admitted to the intensive care unit. Aortic dissection may manifest in various ways depending on the site involved and may mimic other disorders such as ACS or pulmonary embolism. Therefore, clinicians must always be aware of aortic dissection and its different clinical manifestations must be understood.

Key words: Aortic Dissection, Coma, Diagnosis, Symptom

Southeast European Journal
of Emergency and Disaster Medicine
Vol. IX, year 2023, No. 1

INTRODUCTION

Aortic dissection is a relatively uncommon, though catastrophic illness which requires early and accurate diagnosis and treatment for patient survival. The incidence of acute aortic dissection in the general population is estimated to range from 2.6 to 3.5 per 100,000 person-years. Twenty percent of patients with aortic dissection die before reaching the hospital and 30% die during hospital admission. Because acute aortic dissection can result in fatal complications, the mortality rate increases at the rate of 1% to 2% per hour without any treatment. Therefore, fast and accurate diagnosis of aortic dissection is crucial and one must maintain a high index of suspicion.

However, the diagnosis of acute aortic dissection has many potential difficulties. Aortic dissection may mimic other more common conditions, such as coronary ischemia, pulmonary embolism, heart failure, stroke, and acute abdominal illness. Differential diagnosis of aortic dissection to acute coronary syndrome (ACS) may be of particular importance because thrombolytic therapy may be fatal in aortic dissection.

Most common presenting symptoms of acute aortic dissection are acute pain in the chest or back. Pain may be presented alone, or it can be presented with syncope, signs of congestive heart failure, or signs of cerebrovascular accident. Painless aortic dissection is uncommon but is possible with only presenting symptoms and signs of congestive heart failure, cerebrovascular accident, and pulse loss. A study which evaluated factors contributing to delays in diagnosis, delays mostly occurred in female patients with atypical symptoms that were not abrupt or did not include chest, back, or any pain. Therefore, atypical symptoms of aortic dissection should always be considered.

CASE REPORT

A 83-year-old woman was taken to ER by emergency team in Podgorica because her family found on floor unconscious 30 min before admission in ER. She had a medical history of hypertension. On admission, she was comatose, her pupils were circular and sluggishly attracted to light, and she was dyspnoeic, body temperature 36.6°C, saturation 81%. LA couldn't be measured, RA 79/59 mmHG. Electrocardiogram (EKG) was immediately taken which showed normal sinus rhythm with nonspecific ST deviation. Laboratory findings were as follows: creatine kinase (CK) 69 IU/L,, troponin I <10 ng/mL, C-reactive protein 1.5 mg/dL, white blood cell 16,99/μL, haemoglobin 146 g/dL, D-dimer assay 35 ug/mL. Cardiac enzyme levels were all within normal limits and nothing specific was found on the laboratory tests except an increase in D-dimer. We intubated the patient and made the MSCT of endocranium, MSCT of pulmonary artery and aortae. Surprisingly, the CT results showed aortic dissection type A starting from the distal ascending aorta. The thoracic surgery department was immediately contacted and the patient admitted in the central intensive unit. Patient was comatose and the cardiothoracic surgeon had the opinion that the patient was not for the operating program.

DISCUSSION

This case reports a 87-year old woman presenting with coma, low saturation, hypotension but later diagnosed as acute aortic dissection type A. According to Hagan et al., up to 30% of patients later found to have aortic dissection are initially suspected of having other conditions, such as ACSs, aneurysms, pericarditis, pulmonary embolism, aortic stenosis, or even cholecystitis. Despite recent advances in diagnostic methods, misdiagnosis occurs in 25% to 50% of patients on initial evaluation with symptoms mimicking those of acute myocardial infarction and other cardiovascular disorders. Therefore not only is it important to have a clinical suspicion of aortic dissection in patients with abrupt chest pain, but also in patients with unexplained syncope, stroke, acute onset of congestive heart failure, or

symptoms of acute ischemia of extremities or viscera.

First of all, it is important to assess risk factors of aortic dissection through thorough history taking. Aortic dissection occurs more often in men and increases with age. Doctors must ask about a patient's underlying disease such as hypertension, atherosclerosis, or any pre-existing aortic aneurysm. In this case report, the patient had a history of hypertension. Family history of aortic disease may also contribute as a risk factor. Iatrogenic causes of aortic dissection include cardiac catheterization, angioplasty, or cardiac surgery. For younger patients, history of collagen diseases such as Marfan syndrome and Ehlers-Danlos syndrome, bicuspid aortic valve, aortic coarctation, and Turner syndrome should be investigated.

The most common presenting symptom of acute aortic dissection is chest pain which accounts for 79 percent of type A dissections and 63 percent of type B dissections The character of the pain in aortic dissection is typically sharp, tearing, and ripping with an abrupt onset. The severity of the pain is excruciating usually with maximum severity at the time of onset.

Uncommonly, painless dissection has been reported with an incidence of 6.4% to 17%. [1]

Uncommon symptoms include syncope, congestive heart failure symptoms, cardiac tamponade, lower extremity weakness, paraplegia, mesenteric ischemia, or peripheral ischemia.

Physical examination can provide important clues to diagnose aortic dissection. Blood pressure measurement of right and left arm or legs must be done. High blood pressure is found in 70% of distal dissection and 35% of proximal dissection. Pulse check must be performed on bilateral upper and lower extremities as less than 20% of patients have pulse deficit or pulse difference resulting from intimal flap or compression by hematoma. Diastolic murmur indicative of aortic regurgitation is present in about half of the patients with proximal aortic dissection. Occasionally the murmur can be very faint, and it is probable that the physician did not recognize the murmur in this case. Neurologic examinations to evaluate neurological deficits such as loss of consciousness and ischemic paresis are important as they can occur in up to 40% of patients with proximal aortic dissection.

Despite continuous research into novel biochemical diagnostic markers such as smooth muscle myosin heavy chain, there is still no specific blood test marker that can be used to diagnose aortic dissection. D-dimer may be used as an exclusive method to rule out pulmonary embolism and aortic dissection if done within 24 hours after symptom onset. An ECG must be performed on all patients for the differential diagnosis of acute myocardial infarction of aortic dissection. However, clinicians must always keep in mind that aortic dissection can be combined with myocardial infarction if the dissecting membrane involves the coronary arteries. Thirty one percent of aortic dissection patients present with a normal ECG. Therefore, ECG cannot be used as a diagnostic tool. The role of chest radiographs remains unclear in the diagnosis of aortic dissection since 60-90% show abnormal results such as abnormal aortic contour, mediastinal widening, or aortic shadow widening.

For definitive diagnosis, imaging such as CT, magnetic resonance imaging (MRI), transoesophageal echocardiography (TTE), or aortography must be performed. With improvement of CT, CT is the most often used modality to diagnose aortic dissection because of its high specificity and sensitivity, and its availability. However CT has its limitations since it cannot detect aortic regurgitation. MRI also has high specificity and sensitivity, but the test is time consuming and less available. Therefore, MRI is usually used for follow-up imaging or for chronic dissections. TEE is usually used for hemodynamically unstable patients since it can be performed at the bedside or in an operating room for emergencies.

Considering the cost and radiation exposure, using imaging modalities on every patient suspected to have acute aortic syndromes is extremely costly and ineffective. Therefore, the American Heart Association presented guidelines with a risk assessment tool which could be used to stratify patients from low risk to high risk. Depending on the risk group this

Southeast European Journal
of Emergency and Disaster Medicine
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guideline provides clinicians a framework of additional diagnostic methods based on the probability of disease. Research performed in 2011 tested the sensitivity of the above guidelines which presented a high sensitivity of 95.7%. According to this risk score, the patient in this case has aortic dissection detection risk score of 1 (chest pain with abrupt onset), and according to this evaluation pathway, this patient will have undergone aortic imaging for evaluation.

This case report emphasizes the importance of clinical suspicion of aortic dissection and discusses the important clinical presentations of aortic dissection and its diagnostic methods. Furthermore, recent studies on aortic dissection detection risk scores have been discussed. Clinicians must always be aware of aortic dissection and thorough history taking and physical examination must be performed.

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Sažetak: Akutna disekcija aorte je ne toliko čest problem koji može imati fatalne rezultate u slučaju odlaganja lečenja ili pogrešne dijagnoze. Prikazujemo 87-godišnju ženu koja je upućena u urgentni centar sa kliničkom sumnjom na komu. Međutim, kasnije joj je dijagnostikovana akutna disekcija aorte i primljena je na odeljenje intenzivne nege. Disekcija aorte može da se manifestuje na različite načine u zavisnosti od zahvaćene lokacije krvnog sudai može da oponaša druge poremećaje kao što su ACS ili plućna embolija. Zbog toga kliničari uvek moraju razmišljati o postojanju mogućnosti disekcije aorte, kao i njenih različitih kliničkih manifestacija.
Ključne reči: disekcija aorte, koma, dijagnoza, simptom

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