Case study

PAINLESS AORTIC DISSECTION: A RARE AND ATYPICAL CLINICAL PRESENTATION

ABSTRACT:

Aortic dissections (AD) are uncommon, having a high mortality level. It is an extreme vascular emergency that can result in death, when not diagnosed and treated in a timely manner. Diagnosis of Aortic dissection (Type A) can easily be delayed or missed, due to atypical symptoms. A 62 year-old female, without any cardiovascular risk factors, presented to the Emergency Department with digestive symptomatology over fifteen days without any chest pain. Clinically, she was stable, with normal initial laboratory investigations. She consulted a cardiologist, four days later, for progressive dyspnea. A thoraco-abdominal CT was performed confirming the Stanford type A AD above the aortic valve, with a thrombosed dilation extending on 61mm. A transthoracic echocardiogram showed a dilation of the thoracic aorta with type A AD, and a thrombosed false lumen. Urgent surgery was proposed but unfortunately refused by the patient and its family.

We get to learn the challenge to diagnose painless AD, through this case, especially when patient comes with atypical symptoms.

KEYWORDS:

Acute aortic dissection, Atypical and painless presentation, Dyspnea,

INTRODUCTION:

Aortic dissection is a life-threatening disorder that has a high death rate. (1) Acute aortic dissection symptoms can vary. The majority of patients experience a sudden onset of severe pain in their chest, back, or abdomen (2). Atypical presentations are relatively rare and make the diagnosis difficult, especially when the classic pattern of pain is absent : Painless aortic dissection (PAD). We present an unusual case of acute painless aortic dissection type A, with a progressive dyspnea and weakness, in a patient without any cxardiovascular risk factor.

CASE REPORT:

A 61-year-old female with a past medical history of a laminar tricuspid regurgitation (waiting for surgery), without cardiovascular risk factors, presented to the Emergency Department with vomiting, nausea, anorexia, constipation and weakness over 15 days. No associated chest pain, palpitations, or syncope are noted. The patient denies any associated cough, hemoptysis or fever. The clinical examination found a clinically stable patient. The chest X-ray, electrocardiogram, and initial laboratory investigations were all normal.

Four days after she was discharged from the emergency department, she consulted a cardiologist for progressive dyspnea. Vitals signs were: a wide pulse pressure with 107/60 mmHg on the right arm, and 112/70 mmHg on the left one, heart rate of 60 beats/minute, respiratory rate of 18 breaths/minute and temperature of 36.9°C. No signs of heart failure were found. Cardiovascular auscultation was normal. The rest of physical examination was normal as well.

Electrocardiogram showed sinus rate at 80 beats/minute, incomplete left bundle branch block. An acute pulmonary embolism was highly suspected. A thoracoabdominal CT was performed confirming the Stanford type A thoracic AD above the aortic valve, with a thrombosed dilation extending on 61mm, excluding pulmonary embolism **(Figure : 1).** She underwent transthoracic echocardiography which revealed dilation of the thoracic aorta with a type A AD, and a thrombosed false lumen, without any aortic valvulopathy. The patient was

admitted to the intensive care unit for monitoring, blood pressure and heart rate control. Vascular surgeons recommended surgical treatment, that was integrally refused by the patient and its family, due to the high risk of mortality.

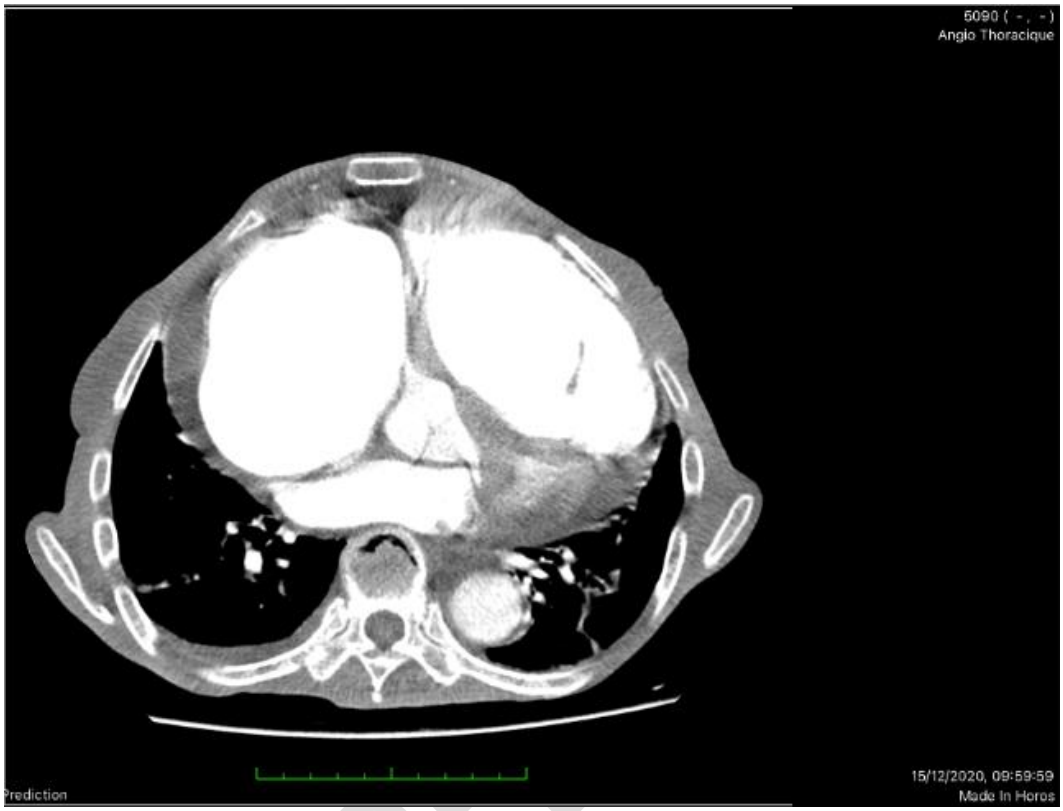

Figure 1: Thoraco-Abdominal CT with contrast confirming the Stanford type A thoracic aortic dissection above the aortic valve.

DISCUSSION:

Acute AD is one of the serious cardiovascular emergencies associated with significant mortality (27,4%) and an incidence up to 3.5 per 100 000 person-years. **(3, 4)** The Stanford classification system defines two types of aortic dissection, type A which involving the ascending aorta and type B limited to the aorta distal to the left subclavian artery. This classification has a therapeutic interest; Type A needs surgical management, while type B usually requires only medical one.

Hypertension is the most major risk factor for Alzheimer's disease (which was absent in our case). (5) and (6) Age, smoking, cholesterol, cocaine usage, genetic illnesses (Marfan syndrome, Ehlers-Danlos syndrome, bicuspid aortic valve,

coarctation of the aorta, preexisting aortic aneurysm), vasculitis, trauma, and iatrogenic causes are just a few of the other risk factors (7)

AD occurs when an intimal rip causes blood to leak and propagate across the aortic medium, forming a false lumen. The dissection can spread proximally and affect the heart, or it can spread distally and affect the descending aorta and its major branches. Factors that contribute to aortic wall medial degeneration and those that promote aortic wall stress are linked to pathogenesis.

Chest pain is one of the most common symptoms in aortic dissection and its absence makes the diagnosisdifficult for the clinician. It's classically described as sudden onset of tearing chest pain, often in the interscapular region and may be associated with syncope,dyspnea, and weakness **(7)**. However, this classical pattern of pain may be absent making the clinical presentation atypical. **(8)** Up to 6% of ADs are painless, and without risk factors (as in our patient) making the chances of missing the diagnosis very high. Especially in the context of neurological sequelae of aortic dissection, many patients without significant pain were reported **(5, 9, 14)** The initial complaints of these patients do not suggest cardiovascular system pathology (As in our presented case).For this reason, the time from admission to a definite diagnosis was significantly longer.

Diagnosis depends on clinical presentation and imaging. High index of suspicion is very important in at-risk patients.

Magnetic resonance imaging (MRI), computed tomography (CT) or transesophageal echocardiography (TEE) are diagnostic with sensitivities of almost 98.3%, 98.3%, and 97.7%, respectively Transthoracic echocardiography (TTE) has only 59.3% sensitivity. **(10)** MRI, CT and TTE imaging usually reveal an intimal flap allowing rapid and accurate diagnosis of AD. **(11)** (In our case, TTE and CT were enough for the diagnosis. MRI was not performed).

Treatment for AD is determined by the type of dissection and whether or not complications exist. While type A AD usually necessitates emergency surgery, type B AD is normally treated medically, but complications may necessitate surgical or endovascular intervention. Beta-blockers are crucial in the treatment of Alzheimer's disease (used for our patient) **(12, 13).**

CONCLUSION:

Atypical presentation of painless aortic dissection may be more frequent than previously reported, that physicians should always keep in mind and widen their differential diagnosis, especially with symptoms of dyspnea and do not hesitate to perform a transthoracic echocardiogram at the slightest suspicion since it is easy to perform and has a non-negligible sensitivity and specificity.

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