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Case Report

Dissecting Aneurysm of the Aorta as a Cause of Sudden Death

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Abstract:

Aortic dissection is infrequent and affects mainly males. We present a 44-year-old male patient with a history of arterial hypertension who presented chest pain which was alleviated spontaneously, in the guardhouse a restless patient was seen, with pain in the upper abdomen, BP 170/100, saturation 98%, FC 100x´, FR 20x´, oliguria. Complementary tests were indicated and while the patient was on guard duty, he suffered sudden death. Aortic dissection is life threatening, an immediate diagnosis is essential, although in many cases it is carried out postmortem.

Key words: aortic dissection; acute aortic syndrome; d dimer

Introduction

The aorta is the largest artery in the body, and it has a wide thoracic and abdominal route. Its wall, which supports great pressures during the ventricular ejection period, is made up of three layers: the intima, the innermost; the average, muscle-elastic; and, finally, the adventitia, fibrous and more external. During aging, the muscle layers are replaced by collagen fibers, which make it more vulnerable to different alterations, such as aneurysms and dissections [1].

Some population studies suggest that the incidence of aortic dissection ranges from 2.6 to 3.5 cases per 100,000 persons per year, with males being the most affected with two thirds of all cases [2]. The IRAD analysis (registry of acute aortic dissections) reported a mean age at presentation of 63 years and a male prevalence of 65% [3]. This disease is a medical emergency, [4] generally serious (15% of aortic rupture) .1 In the first 48 hours the Mortality is usually approximately 1%, per week it could reach 75% and up to 95% within the first month [1].

Aortic dissection consists of the separation of the middle layer of the aortic wall into which blood from the aorta penetrates, thereby establishing a false lumen that can compress the true lumen of the vessel.2-4 About 95% of ruptures occur in the ascending aorta, distal to the aortic valve [3].

Aortic dissections can be classified using two different systems: DeBakey Classification, which takes into account the origin of the intimal rupture and the extent of the dissection, and Stanford Classification, which is simpler, depending on the involvement or not of the ascending aorta in its proximal portion [1,5,6].

The classification most used due to its ease of use and the highest correlation for the surgical indication is the Stanford classification [2].

Known risk factors such as hypertension, connective tissue diseases (Marfan syndrome, atherosclerosis, Turner syndrome) 2,4 or surgical aortic valve replacement should be taken into account in patients with symptoms suggestive of aortic dissection [4].

The cardinal symptom that causes this condition is severe, sudden, consistent and radiating chest pain to the back, with a variety of associated symptoms depending on the compromise of supra-aortic, abdominal, spinal, limb or renal vessel blood flow. Other symptoms described are

neck pain, sore throat, abdominal or lumbar pain, syncope, or dyspnea.3 Femoral pulses may be diminished or asymmetric. A complete obstruction of the iliac bifurcation will manifest as a Leriche syndrome [3].

Presentation of the case

44-year-old male patient with a history of arterial hypertension (HTN), of several years of evolution, without treatment, alcoholic and marijuana smoker. At night he began with chest discomfort, in the early morning he began with chest pain which was spontaneously alleviated, for which he is taken to the guardhouse where he is seen restless patient, who suffered from pain in the upper abdomen, TA 170 / 100, 98% saturation, HR 100x ', RR 20x', oliguria. Complementary tests are indicated and while the patient is on guard duty, he suffers sudden death.

Complementary Exams:

D-Dimmer 80 Normal up to 200

Creatinine 154 mmol/l Normal 70-106 mmol/l

Na 141 K 4.3

Alanine aminotransferase (ALT): 90 Normal up to 80

Aspartate aminotransferase (AST): 110 Normal up to 64

Hemoglobin 12.8 g/l

Leukogram: Leucosites $9.8x10^9$ Polymorphonuclear 56.48% Lymphocytes 43.50% Eosinophils 0.02%

EKG Signs of left ventricular hypertrophy

Pathological anatomy:

Immediately upon opening the thoracic cavity, a distended pericardial sac was observed due to the amount of blood and clot. In pathology, this sign is known as a "blue bag" (Figure 1)

In the ascending aorta, a tear in the wall is observed, between the intima and media layers of 3 cm in length (Figure 2 and 3).

Hypertrophy of the heart muscle (Figure 4).

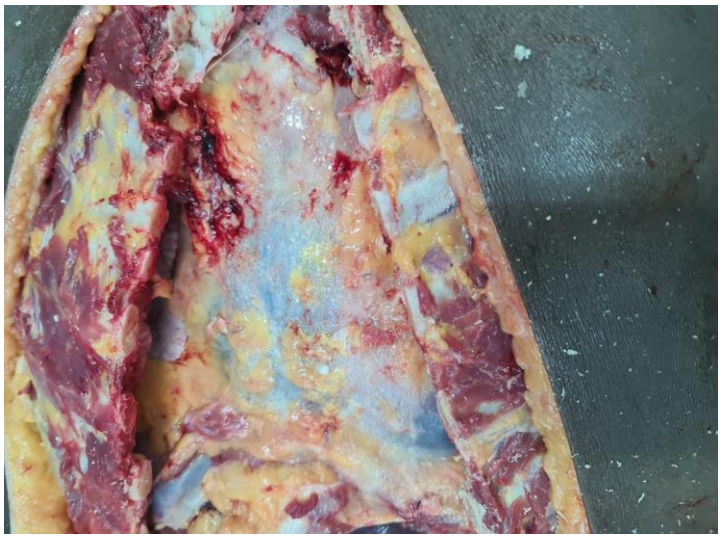

Figure 1: *Blue bag sign*

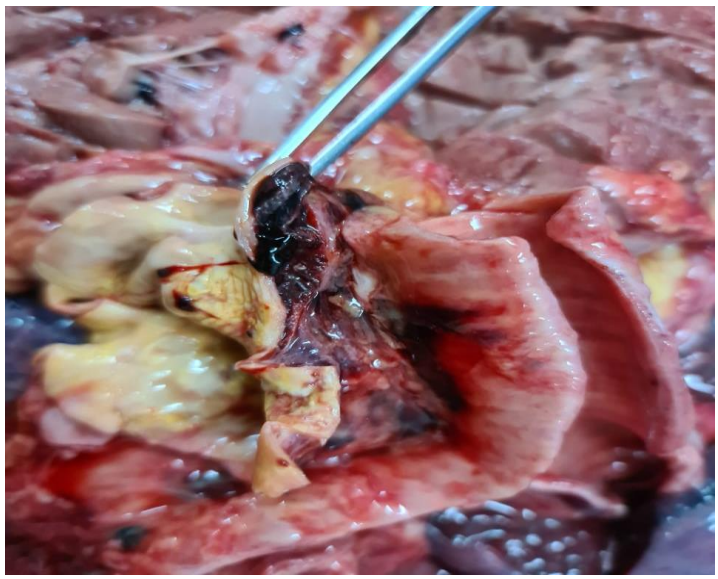

Figure 2: *Aortic dissection*

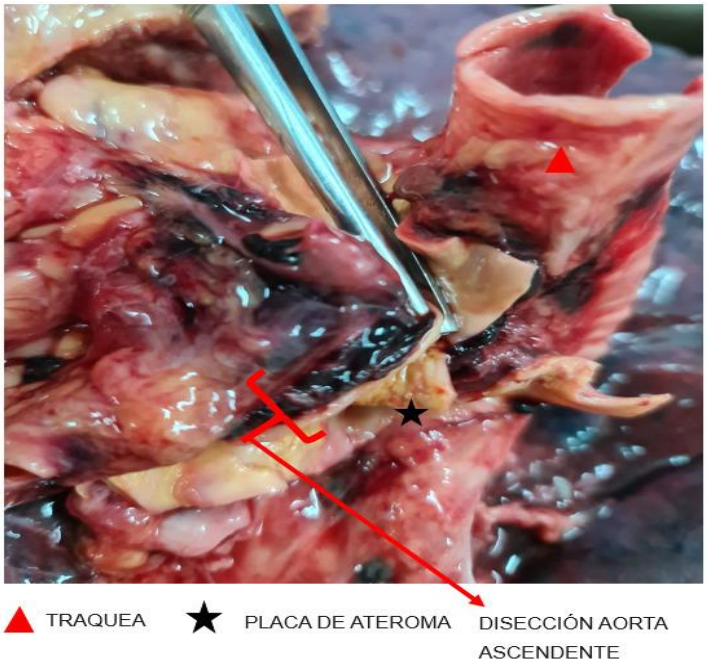

Figure 3: *Aortic dissection*

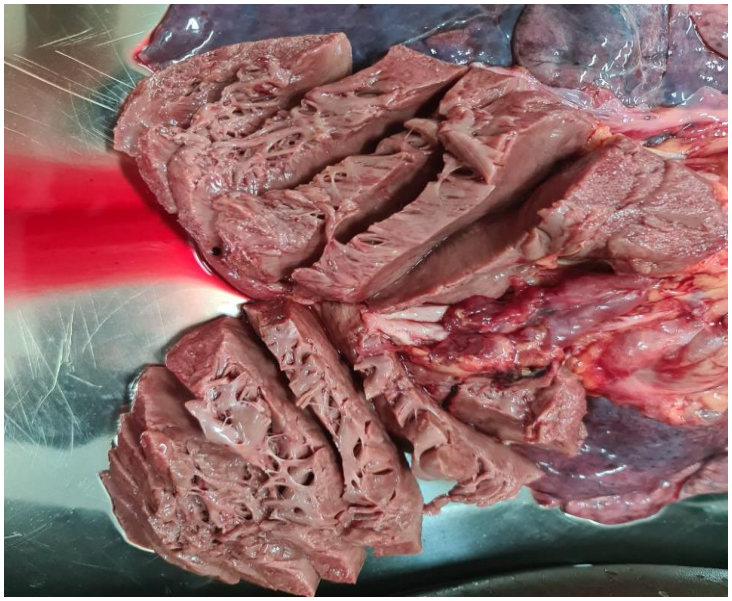

Figure 4: *Heart*

Discussion:

Although several studies suggest that the mean age at presentation of aortic dissection is 63 years, [1] in this case it is striking that the condition occurred in a 43-year-old adult. Anatomical-structural and hemodynamic factors are involved in the DAA production mechanism. Arterial hypertension and endothelial dysfunction contribute directly to rupture or laceration of the vessel wall, 1 it is the risk factor most associated with aortic dissection [2].

The patient studied may have had an incidence of arterial hypertension of several years of evolution in the production of the disease, in addition, he did not have the disease compensated because he did not have regular treatment for it. The classic symptoms are sudden, intense chest pain, radiating to the back, described as lancinating or tearing, constant, sometimes accompanied by syncope, weakness in the lower limbs or cerebrovascular accident, 4 in the case presented, as the portion is affected. ascending aortic pain was predominantly at the thoracic level.

The initial diagnosis is extremely important. It is especially important to take into account the level of D-dimers (DD) in patients with acute aortic dissection.6 Although some bibliographies suggest that a negative result of the DD test is not enough to rule out aortic dissection.7 The case described presented a DD Negative.

Dissection of the ascending aorta is highly lethal, with an estimated mortality of 1% to 2% per hour after the onset of symptoms. Without surgery, mortality exceeds 50% one month after symptoms started; with cumulative mortality of 20% at 24 hours, 30% at 48 hours, 40% at week, and 50% at month [9]. Even with surgical treatment, mortality is as high

as 10% at 24 hours and 20% per month.2 In the case presented, there was no time for the pre-death diagnosis, as the patient suffered sudden death within minutes of arriving at the emergency room.

Conclusions

The dissection of the abdominal aorta is a disease with low incidence, more frequent in hypertensive and elderly patients. Its evolution is usually life-threatening, an immediate diagnosis is essential, although in many cases it is carried out postmortem.

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