INTERNATIONAL SEVEN JOURNAL
OF HEALTH RESEARCH
ISSN: 2764-9415

Mixed aortic dissection: surgical and conservative approach

DOI: 10.56238/eSvjH3N3-020
Receipt of originals: 05/11/2024
Acceptance for publication: 05/31/2024

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INTERNATIONAL SEVEN JOURNAL
OF HEALTH RESEARCH
ISSN: 2764-9415

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ABSTRACT
Acute aortic dissection is a potentially serious clinical condition and diagnosis is often delayed due to errors made in the patient's first treatment. In the case reported below, one patient was hospitalized with classic symptoms of substernal pain radiating to the back, a condition that had started more than five days earlier. In the emergency room, correct care and diagnoses were carried out and the patient was referred to the surgical center. A few days after the operation, the patient returned with a new dissection, this time in the most distal part of the aorta, which was treated clinically, without surgical intervention. Care information and surgical reports were collected, and a brief review of the literature was performed to address the clinical case. The patient, after two complications, evolved well and fully recovered.

Keywords: Dissection, aorta, surgery.

1 INTRODUCTION

Acute aortic dissection (AAD) is a rare but clinically complex condition with high mortality if not diagnosed early and appropriate treatment started as soon as possible. It is the loss of the structure of the aortic wall, due to the accumulation of blood between the intima and media layers, possibly due to the entry of blood due to the loss of continuity in the former, leaving the latter exposed to pulsatile flow. blood coming from the left ventricle, generating a "false light" in the vessel 1,2.

AAD has a low incidence of cases; Studies report about 2 to 6 cases per 100,000 population per year. Although it is rare in daily clinical practice, it is a complex condition for the time that can be lost to establish the correct diagnosis: the symptoms are not specific and the most important is chest pain, usually of intense intensity, which most of the time. leads to the diagnostic suspicion of acute myocardial infarction 1,3.

Due to the difficulty of making a diagnosis based only on clinical parameters and symptoms presented by patients, it is essential to use imaging tests to assist in the diagnosis of this pathology. The first and most accessible examination would be chest X-ray, which would show mediastinal enlargement, which is present in most patients 2.

However, this method is not specific enough to make the diagnosis, which requires other sources. In general, CT is an excellent option for visualizing the diseases that cause acute aortic syndrome, especially those that lead to the formation of intramural hematomas - as is the case with AAD. For stable cases and cases with late suspicion, magnetic resonance angiography also offers good accuracy and does not use ionizing radiation 2,3.

In the emergency room, transesophageal ultrasonography is the best option, due to the possibility of performing the examination at the bedside and due to its good sensitivity and specificity in comparison with AAD and other acute aortic syndromes. Although they are not specific, clinical signs, patient complaints, and risk factors should not be ignored, as they can also help in concluding the diagnosis; As for laboratory tests, they are not very frequent in cases of AAD, D-dimer is the only one that can lead to a diagnostic exception, if there is no elevation 1-3.

As for treatment, a clinical approach can be adopted, based on symptomatic control and stabilization of blood pressure and heart rate, or surgical intervention to correct the affected segment and redirect the flow to the true lumen of the aorta. Patients with descending aortic involvement can receive conservative treatment, while patients with ascending aortic involvement (Stanford classification A) should be treated with emergency surgery 2,4.

This case report aims to describe the therapeutic approach adopted with a 47-year-old patient admitted to the emergency room of the hospital complaining of severe retrosternal pain, later diagnosed by Stanford type A dissection. after presenting complications due to type B dissection and receiving conservative treatment.

2 METHODOLOGY

Case report based on the medical records of a 62-year-old male patient, all well documented. The study was approved by the ethics committee of the hospital where the patient in the case received the care described. This study followed the guidelines of the National Council for Ethics in Research (CONEP) during its preparation. To complement the content, searches were carried out in electronic databases, such as PubMed, Lilacs and Scielo.

3 CASE REPORT

A 48-year-old female patient was referred for retrosternal pain in the last few hours, radiating to the left hypochondrium and back. She had systemic arterial hypertension (SAH) for more than 25 years, and at the time of cision she had blood pressure (BP) of 155x81 mmHg, heart rate of 88 bpm, no fever and 94% saturating on room air, being in regular general condition.

After admission, a chest X-ray was requested, which showed cardiomegaly. Next, a computed tomography (CT) scan of the chest was performed, which diagnosed a type A aortic dissection according to the Stanford classification, which extended to the abdominal aorta, with a smaller-caliber false lumen from the descending aorta.

Preoperative tests were performed, which did not show alterations that needed correction before the intervention. The patient was medicated with a high-dose vasodilator and beta-blocker remained hypertensive, with systolic BP ranging from 130 to 150 mmHg.

The surgery was performed on the same day, about 11 hours after admission. The aortic dissection was corrected and the aortic valve was replaced by a bioprosthesis. There were no complications and the follow-ups addressed were those most affected - ascending aorta to descending, and these were completely repaired. The abdominal portion did not receive surgical intervention at the time.

After surgery, the patient was taken to the intensive care unit (ICU) hemodynamically stable, with BP 140x80. The medication was adjusted to achieve a target systolic BP between 80 and 90 mmHg and postoperative antibiotic prophylaxis was initiated. Extubation occurred on the following day and room air saturation remained between 93 and 98%.

At a scheduled outpatient return visit, 1 month after discharge, the patient was in good general condition, with significant weight loss, and did not report new complaints. Imaging tests were requested for subsequent outpatient evaluation. Only 3 days after the outpatient consultation, the patient is admitted again to the hospital's emergency room, complaining of severe abdominal pain, located in the epigastrium and mesogastrium.

Due to its recent history, the diagnostic hypothesis of enlargement of the abdominal aortic aneurysm that had remained as a residue from the last surgical intervention was raised. At the time, the patient was oriented, in regular general condition, with no other complaints. Imaging studies were requested, and contrast-enhanced CT angiography revealed enlargement of the abdominal aortic dissection, starting from the descending portion, extending to the common iliac arteries, without compromising the internal or external segments, thus being a Stanford type B dissection. The examination also revealed a hypovascularized splenic area, possibly infarcted.

Angioplasty was performed with *stenting* in the superior mesenteric artery to reestablish the lumen. The procedure was successful, and there were no complications during the procedure. Regarding Stanford type B dissection, the vascular and general surgery teams opted for a conservative approach. The procedure was successful and the patient was discharged after a few days hospitalized in a common ward bed.

4 DISCUSSION

Although the pathophysiology of this clinical condition is not fully defined, the literature is able to provide conditions that can support, in the long term, the development of an acute picture of AAD, including systemic hypertension (SAH) for long periods of time, sexual intercourse. . men's diseases, smoking, aortic aneurysm, and collagen diseases such as Marfan syndrome or Loeys-Dietz syndrome 1,2.

In the case reported here, the patient had been hypertensive for more than two decades and was not within the blood pressure target for a significant period, making it difficult to maintain blood pressure at adequate levels even with the specialized medication available at the hospital service. Although the relationship between SAH and AAD seems indisputable, the literature needs more data to firmly establish the pathophysiological correlation. Regarding the classification of acute aortic dissections, in this clinical case the Stanford anatomical classification was used as a reference, which takes into account the affected segment. As long as there is injury to the ascending aorta, with or without injury to the descending aorta, we will have AAD type A; When the descending aorta and/or lower limbs are affected, we have a type B DAA of 1.5.

The decision for surgical or clinical intervention varies according to the severity of the disease, which follows the Stanford anatomical classification. First, the patient in this clinical case was admitted to the emergency room and, after examinations and imaging tests, type A dissection was diagnosed. These cases should be treated surgically, given the high mortality, which increases from 1 to 1.2% per hour in the first 48 hours 1,2.

The surgical procedure consists of correcting the dissected part, removing the injured segment and redirecting the blood flow, which was previously blocked in a region of "false lumen", to the true lumen. In general, cases of associated aortic regurgitation can be corrected by suspending the proprioceptive apillars after repair of the ascending aorta 2.

In the case of the patient, it was not enough, requiring the complete replacement of the valve with a biological one. Dissection of the ascending part of the aorta is greatly feared not only because of the mortality, which increases every hour before the operation, but also because of the complications that may arise after the surgical process; As in other emergency cardiovascular surgeries, mortality and complications are significantly higher when AAD type A is corrected 6.

The patient's second incident referred to a type B dissection associated with splenic ischemia and stenosis of the superior mesenteric artery. Cases of type B AAD can receive clinical

treatment with the objective of reducing cardiac output by controlling heart rate and blood pressure, reducing wear and tear on the already compromised aortic wall, and controlling pain 1,2.

In the case of the patient, nitroprusside was used as a vasodilator at a dose of 78.2 mL/h and esmolol as a beta-blocker at a dose of 65 mL/h. There was no need for opioid administration for pain control, which was significantly reduced in intensity with medication for blood pressure control. In the first few days, the patient's blood pressure was resistant to the medication and after some time it passed.

Finally, it was concluded regarding the first treatment for Stanford type A dissection that the treatment was performed in a precise and objective manner, without speculation about false diagnostic hypotheses, due to the presence of signs that are not easily confused with AMI and the team team. The wise decision to take the patient for imaging tests allowed surgery before the condition worsened and the prognosis worsened.

As for the second intervention, before he wanted to, although he initially alarmed the team, the suggested hypothesis was correct and was simply the manifestation of the extent of the type B dissection, which was not treated surgically. The option for conservative measures was right and the drugs managed, after a while, to keep the patient's blood pressure and heart rate in the desired range. Stent in the superior mesenteric artery resolved the ischemia and the patient was discharged for outpatient follow-up.

CONFLICTS OF INTEREST

The authors declare that there is no potential conflict of interest that could interfere with the impartiality of this scientific work.

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