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Clinical case

Diagnosis and management of Stanford type A aortic dissection. Case presentation

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SUMMARY

Stanford type A aortic dissection is a life-threatening condition requiring rapid diagnosis and immediate surgical treatment. We present the case of a 56-year-old woman with long-standing, irregularly treated hypertension who presented with sudden, intense, burning chest pain radiating to her back and epigastrium, accompanied by a feeling of impending death. Physical examination revealed an aortic diastolic murmur and asymmetry of the radial pulses. Echocardiography confirmed the presence of a flap intimal lesion in the ascending aorta with

severe aortic regurgitation. Medical management was initiated with labetalol and morphine to control blood pressure and pain, followed by transfer to surgery for definitive treatment. This case reinforces the importance of clinical suspicion in cases of atypical chest pain, the value of physical examination and echocardiography for early diagnosis, and surgery as the only curative option.

Keywords: Type A aortic dissection; Echocardiography; Arterial hypertension; Surgical emergency.

ABSTRACT

Stanford type A aortic dissection is a potentially life-threatening condition that requires rapid diagnosis and immediate surgical treatment. We present the case of a 56-year-old woman with long-standing arterial hypertension, irregularly treated, who presented with sudden, severe, burning chest pain radiating to the back and epigastrium, accompanied by a sensation of impending death. Physical examination revealed an aortic diastolic murmur and asymmetry of the radial pulses. Echocardiography confirmed the presence of an intimal flap in the ascending aorta with severe aortic regurgitation. Medical management with labetalol and morphine was initiated to control blood pressure and pain, followed by transfer to surgery as the definitive treatment. This case reinforces the importance of clinical suspicion in the presence of atypical chest pain, the value of physical examination and echocardiography for early diagnosis, and surgery as the only curative option.

Keywords: Stanford type A aortic dissection; Echocardiography; Arterial hypertension; Surgical emergency.

SUMMARY

Stanford type A aortic dissection is a potentially fatal condition that requires rapid diagnosis and immediate surgical treatment. We present the case of a 56-year-old woman with long-standing arterial hypertension treated irregularly, who sought attention for sudden, intense thoracic pain,

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RPNS-1853

burning and radiating to the coasts and epigastrium, accompanied by a sensation of imminent death. The physical examination revealed aortic diastolic pain and asymmetry of two radial pulses. Echocardiography confirmed the presence of an intimal flap in the ascending aorta with severe aortic insufficiency. Medical management begins with labetalol and morphine to control blood pressure and pain, followed by transfer for surgery as definitive treatment. This case reinforces the importance of the clinical suspicion of atypical thoracic pain, the value of physical examination and echocardiography for early diagnosis, and surgery as the only curative option.

Key words: Aortic dissection type A; Echocardiography; Arterial hypertension; Surgical urgency.

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Introduction

Aortic dissection is a serious condition characterized by the separation of the aortic layers, with an estimated incidence of 2.5 to 3.5 cases per 100,000 inhabitants and a mortality rate reaching 50% within the first 48 hours without treatment. Diagnosis is challenging due to the similarity of its symptoms to other conditions, such as acute myocardial infarction, resulting in it being correctly suspected in only 15% to 43% of confirmed cases. The Stanford classification distinguishes between type A dissection, which affects the ascending aorta and requires urgent surgery, and type B, which can be managed medically or with endovascular surgery. (1-4) This report presents a case of type A aortic dissection to highlight the particularities of its clinical presentation, diagnostic approach, and therapeutic management.

ONLINE VERSION: ISSN 1028-4818

RPNS-1853

Case presentation

History of the present illness

A 56-year-old female patient from a rural area, with a 25-year history of hypertension, treated irregularly with enalapril and captopril, presented to the emergency department with sudden onset of severe, burning chest pain radiating to the epigastrium and back, accompanied by a feeling of impending death and elevated blood pressure. The pain was not relieved by nitroglycerin, but was relieved by morphine.

Positive physical exam

Heart rate: 100 bpm, blood pressure: 160/80 mmHg. Conscious, oriented to time, place, and person. Grade II/VI diastolic murmur at the aortic area. Asymmetry in radial pulse amplitude, diminished in the right extremity. Soft abdomen, tender to palpation in the epigastrium. Aorta not palpable. No neurological abnormalities.

Diagnostic evaluation

An electrocardiogram was performed, which showed sinus rhythm with nonspecific repolarization abnormalities and no ST-segment changes. A transthoracic echocardiogram (Figure 1) revealed mild dilation of the aortic root and sinotubular portion (42 mm and 46 mm, respectively), along with an intimal flap in the ascending aorta 3 mm from the aortic leaflets, accompanied by severe aortic regurgitation. No abnormalities were observed in the abdominal aorta. Based on these findings, a diagnosis of Stanford type A aortic dissection was established. The differential diagnosis included acute coronary syndrome and other causes of chest pain, but the combination of atypical pain, pulse asymmetry, and echocardiographic findings confirmed the condition.

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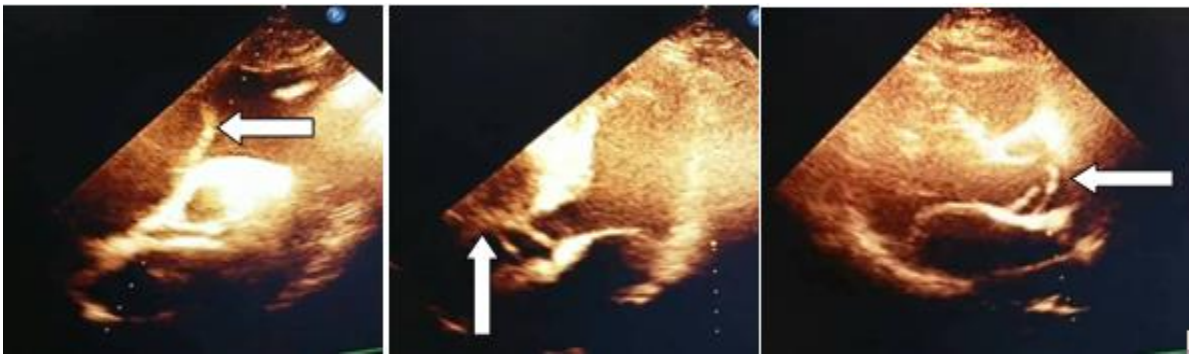

Fig. 1. Echocardiogram. Left parasternal long axis view (right), apical 3-chamber view (center), suprasternal view (left). Intimal flap is observed in the ascending aorta (arrows).

Source: Medical record. Celia Sánchez Manduley Clinical Surgical Hospital, Manzanillo, Granma.

Therapeutic intervention

Medical treatment was initiated with morphine for pain control and intravenous labetalol to reduce blood pressure and heart rate. A target blood pressure of 110/70 mmHg was achieved. Subsequently, a transition to oral bisoprolol and enalapril was planned. Definitive treatment consisted of urgent surgical intervention, which included ascending aortic replacement (Figure 2), with resection of the dissected aortic portion, open distal anastomosis of a 12-cm graft, and completion of graft implantation.

Monitoring and results

The post-surgical evolution was favorable with regression of the manifestations and without complications.

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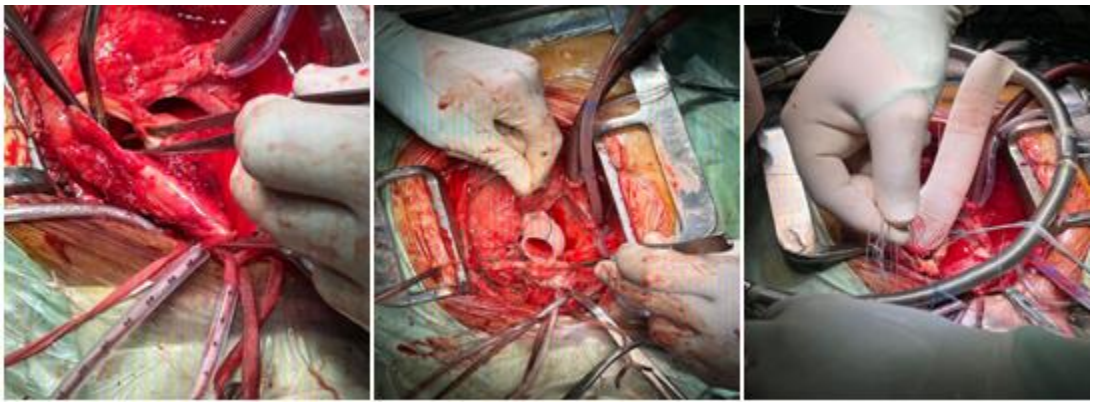

Fig. 2. Corrective surgery for replacement of the ascending aorta.

Discussion

This case illustrates a presentation of type A aortic dissection, with findings similar to those reported by Dávila Castro and Lemus Galván, (2) who also highlight poorly controlled hypertension as a predominant risk factor. As in the case of Izaguirre Campillo et al., (3) atypical chest pain and abdominal radiation can complicate the initial diagnosis; however, unlike the case of Arias et al., (5) in which the main symptom was sudden headache, the patient in this case presented with chest pain as the central manifestation.

The absence of computed tomography represented a limitation in the complete anatomical evaluation, although the echocardiogram was sufficient to confirm the diagnosis and activate the surgical protocol, as recommended by the literature. (1,6)

Initial medical management with labetalol and morphine was effective and consistent with current guidelines. The patient's female age and age below the reported mean reinforce the observations of Muñiz Espinosa and Pérez Linares, (7) who indicate that the disease can occur in younger populations with significant risk factors. Urgent surgery, as performed in the cases of Morante Perea et al., (8) and Claire Guzmán et al., (6), remains the cornerstone of treatment to modify the fatal prognosis of this condition.

This case offers a scientific novelty by demonstrating that, even without computed tomography, accurate diagnosis and successful treatment are possible through clinical suspicion in cases of atypical chest pain, which can complicate diagnosis (1,3), and in a relatively young hypertensive woman. This finding is similar to, and differs from, what has been reported in the scientific literature, as well as the integration of findings from the physical examination, such as pulse asymmetry, murmur, and echocardiographic findings. (1-4,7) Its practical significance lies in validating the echocardiogram as a sufficient tool to activate the urgent surgical protocol, the cornerstone of treatment and the only method to save the lives of these patients.

Conclusions

This case underscores the importance of maintaining a high index of clinical suspicion for atypical chest pain in hypertensive patients, including young women. A thorough physical examination and echocardiogram are essential for early diagnosis. Urgent surgical intervention is the only curative treatment and should be implemented without delay to improve survival.

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Conflict of interest

The authors declare no conflict of interest.

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Authorship contribution

Conceptualization, data curation, formal analysis, supervision and validation: Leandro Adrián Berro Rosales.

Research, visualization, writing and original draft: Leandro Adrián Berro Rosales, José Grabiel Correa Rodríguez, Manuel de Jesús Mesa Quesada.

Methodology, writing, review and editing: Leandro Adrián Berro Rosales, José Grabiel Correa Rodríguez.