

CASE REPORT

Case Report: Stanford Type B Descending Aortic Dissection

A propósito de un caso: disección de la aorta descendente Stanford tipo B

A propósito de um caso: dissecação da aorta descendente Stanford tipo B

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ABSTRACT

Stanford type B aortic dissection may cause mild symptoms despite extensive anatomical involvement. We report the case of a 70-year-old man with longstanding hypertension, a history of ischemic heart disease, hypothyroidism, and ventricular ectopy who reported mild lumbar pain during a cardiology assessment. Computed tomography angiography of the chest and abdomen revealed aneurysmal dilatation of the descending thoracic aorta measuring 8.05×7.69 cm, a proximal intimal flap, mural thrombus, possible involvement of the celiac artery origin, and extension of the dissection to both common femoral arteries. Following stabilization with intravenous antihypertensive therapy, beta-blockers, and analgesia, thoracic endovascular aortic repair was performed to cover the proximal entry tear. Clinical improvement, reduced pain and ventricular ectopy, and adequate blood pressure control were described. This case highlights the importance of considering aortic disease in patients with lumbar pain and cardiovascular risk factors, and of integrating anatomy, symptoms, and clinical status when selecting treatment.

Keywords: Aortic dissection; aortic aneurysm, thoracic; computed tomography angiography; endovascular procedures; case reports.

RESUMEN

La disección aórtica tipo B puede presentar manifestaciones poco intensas pese a un compromiso anatómico extenso. Se presenta el caso de un hombre de 70 años con hipertensión arterial de larga evolución, antecedentes de cardiopatía isquémica, hipotiroidismo y extrasistolia ventricular, quien refirió dolor lumbar leve durante una valoración cardiológica. La angiotomografía de tórax y abdomen mostró dilatación aneurismática de la aorta torácica descendente de $8,05 \times 7,69$ cm, con colgajo intimal proximal, trombo mural, posible compromiso del origen del tronco celiaco y extensión de la disección hasta las arterias femorales comunes bilaterales. Tras estabilización con antihipertensivos intravenosos, betabloqueadores y analgesia, se realizó reparación endovascular mediante implante de una endoprótesis torácica para cubrir la puerta de entrada proximal. Se describió mejoría clínica, disminución del dolor y de las extrasístoles, y adecuado control de la presión arterial. El caso destaca la importancia de considerar enfermedad aórtica ante dolor lumbar en pacientes con factores de riesgo cardiovascular y de integrar la anatomía, los síntomas y el estado clínico en la elección del tratamiento.

Palabras clave: Disección aórtica; aneurisma de la aorta torácica; angiografía por tomografía computarizada; procedimientos endovasculares; informes de casos.

RESUMO

A dissecação aórtica tipo B pode apresentar manifestações pouco intensas apesar de um comprometimento anatômico extenso. Apresenta-se o caso de um homem de 70 anos com hipertensão arterial de longa evolução, antecedentes de cardiopatia isquêmica, hipotireoidismo e extrassístolia ventricular, que referiu dor lombar leve durante uma avaliação cardiológica. A angiotomografia de tórax e abdome mostrou dilatação aneurismática da aorta torácica descendente de $8,05 \times 7,69$ cm, com flap intimal proximal, trombo mural, possível comprometimento da origem do tronco celiaco e extensão da dissecação até as artérias femorais comuns bilaterais. Após estabilização com anti-hipertensivos intravenosos, betabloqueadores e analgesia, realizou-se reparo endovascular mediante implante de uma endoprótese torácica para cobrir a porta de entrada proximal. Descreveram-se melhora clínica, diminuição da dor e das extrassístoles e controle adequado da pressão arterial. O caso destaca a importância de considerar doença aórtica diante de dor lombar em pacientes com fatores de risco cardiovascular e de integrar a anatomia, os sintomas e o estado clínico na escolha do tratamento.

Palavras-chave: Dissecação aórtica; aneurisma da aorta torácica; angiografia por tomografia computadorizada; procedimentos endovasculares; relatos de casos.

INTRODUCTION

Aortic dissection consists of the separation of the layers of the aortic wall, usually due to an intimal tear that allows the formation of a false lumen. Its extension may involve arterial branches and cause organ ischemia. In the Stanford classification, type B does not involve the ascending aorta. The anatomical definition and the assessment of complications guide management.^(1,2)

Arterial hypertension, advanced age, male sex, and heritable aortopathies are among the factors associated with thoracic aortic dissection.⁽³⁾ Diagnosis can be difficult when symptoms are mild or nonspecific. Clinical assessment and timely imaging are essential to recognize the lesion and plan its treatment.⁽⁴⁾ We present a case of type B dissection with marked dilatation of the descending thoracic aorta, detected in a patient who reported mild lumbar pain and treated with endovascular repair.

CASE PRESENTATION

A 70-year-old man with a history of arterial hypertension, ischemic heart disease, hypothyroidism, and high-burden ventricular ectopy. A period of approximately ten years without cardiovascular treatment was described, with blood pressure readings above 200/110 mmHg, followed by the use of valsartan/hydrochlorothiazide. During a follow-up cardiology visit, he reported mild lumbar pain. On examination, he had arrhythmic heart sounds and a grade II/VI systolic murmur at the mitral area. The abdomen was soft, depressible, and nontender, with abundant abdominal adiposity.

Laboratory tests showed a hematocrit of 42.6%, hemoglobin of 15 g/dL, glucose of 98 mg/dL, urea of 32.4 mg/dL, and creatinine of 1 mg/dL. The lipid profile reported total cholesterol of 300 mg/dL, triglycerides of 350 mg/dL, HDL cholesterol of 20 mg/dL, and LDL cholesterol of 130 mg/dL.

Twenty-four-hour ambulatory blood pressure monitoring, performed while on antihypertensive treatment, recorded a mean of 128/83 mmHg, with daytime values of 128/84 mmHg and nighttime values of 128/80 mmHg. Holter monitoring showed ventricular ectopy with a burden of 22%. Coronary computed tomography angiography reported a calcium score of 364 Agatston units and a 50–60% stenosis in the proximal segment of the left anterior descending artery; the remaining segments showed mild lesions.

Computed tomography angiography of the chest and abdomen identified aneurysmal dilatation of the descending thoracic aorta measuring 8.05×7.69 cm, with a dissection flap in its proximal

portion and mural thrombus on the anterior wall (Figure 1). Possible involvement of the celiac trunk origin and extension of the dissection to both common femoral arteries were reported, consistent with Stanford type B dissection (Figure 2). The possible involvement of the celiac trunk was considered an anatomical finding; confirmation of visceral malperfusion was not documented in the clinical description.

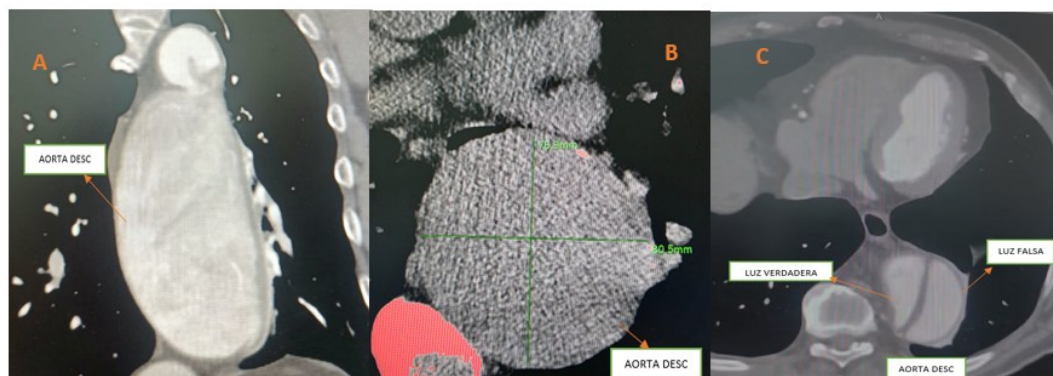


Figure 1. Computed tomography angiography of the thoracic aorta before treatment. A: longitudinal reconstruction of the descending thoracic aorta showing marked aneurysmal dilatation. B: measurement of the aortic diameters, approximately 80.5 × 76.9 mm. C: identification of the true lumen, the false lumen, and the intimal flap. Source: image archive of the CARDIOCENTER Cardiology Center.



Figure 2. Thoracoabdominal computed tomography angiography before treatment. A and B: longitudinal reconstructions showing the aortic dilatation and the true and false lumens. C: coronal reconstruction showing extension of the dissection into the iliac territory. Extension to both common femoral arteries was described in the computed tomography angiography report. Source: image archive of the CARDIOCENTER Cardiology Center.

Intravenous antihypertensive agents, beta-blockers, and analgesia were administered for initial stabilization. Given the type B dissection associated with a large aortic dilatation, an endoprosthesis was implanted in the descending thoracic aorta to cover the proximal entry tear of the dissection. Follow-up computed tomography angiography showed the endoprosthesis in the treated segment (Figure 3).

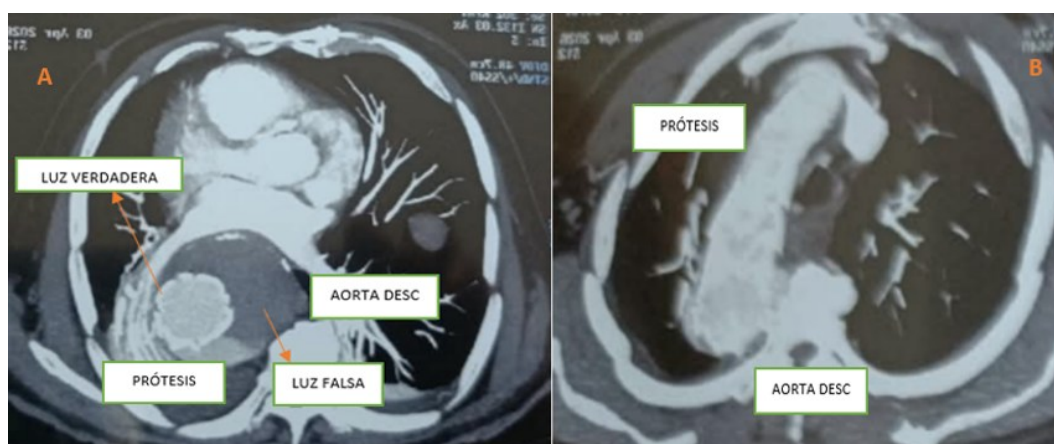


Figure 3. Chest computed tomography angiography after endovascular treatment. A: axial slice showing the endoprosthesis in the descending aorta and the delineation of the true and false lumens. B: oblique reconstruction of the treated thoracic segment. Source: image archive of the CARDIOCENTER Cardiology Center.

After the intervention, treatment was described with bisoprolol 2.5 mg/day, rosuvastatin/ezetimibe 20/10 mg/day, valsartan/hydrochlorothiazide 160/12.5 mg/day, clopidogrel 75 mg/day, and pregabalin 75 mg/day, in addition to tramadol/paracetamol for severe pain. Clinical improvement, reduced pain and ventricular extrasystoles, and adequate blood pressure control were reported. Functional capacity was described as New York Heart Association class II. The follow-up interval was not specified, and no serial post-procedural aortic measurements were provided.

DISCUSSION

The main interest of this case lies in the discordance between the mild intensity of the lumbar pain and the magnitude of aortic involvement. Long-standing hypertension is a relevant antecedent, although a single case report cannot establish causality. Population-based studies have associated hypertension with the risk of aortic dissection.⁽⁵⁾ Coexisting dyslipidemia and coronary artery disease reinforce the need to address global cardiovascular risk, although these findings do not allow a single mechanism to be attributed to the lesion.

Temporal classification requires knowing the onset of symptoms: the European guideline distinguishes hyperacute, acute, subacute, and chronic phases, the latter beyond 90 days.⁽²⁾ In this patient, the duration of pain was not specified, so a temporal phase cannot be assigned with certainty. Nor should the possible anatomical involvement of the celiac trunk be equated with confirmed malperfusion.

Initial stabilization aims to reduce stress on the aortic wall through analgesia and control of blood pressure and heart rate. In acute aortic syndrome, the ACC/AHA guideline recommends a systolic blood pressure below 120 mmHg, or the lowest level that preserves organ perfusion, and a heart rate of 60–80 beats per minute.⁽¹⁾ These targets describe general recommendations; no case records are available to verify whether they were achieved during stabilization.

The choice among medical treatment, endovascular repair, and open surgery depends on the phase, anatomy, complications, and individual risk.^(1,2) The maximum diameter of 8.05 cm is a relevant finding for the decision to intervene. Endovascular repair seeks to cover the proximal entry tear and promote aortic remodeling. Its evidence should be interpreted according to clinical presentation and patient selection; syntheses that include both complicated and uncomplicated dissections do not justify assuming a uniform benefit across all scenarios.⁽⁶⁾

In this case, a favorable clinical course was described after treatment, but the presence of the endoprosthesis on imaging does not by itself demonstrate complete thrombosis of the false lumen, absence of endoleak, or durable remodeling. Imaging surveillance after a dissection makes it possible to monitor the residual aorta and detect complications.^(1,2) The limitations of this report include the lack of a precise chronology, of complete technical details of the procedure, and of a defined follow-up period. Therefore, its results should be confined to the clinical course described and not extrapolated to long-term efficacy.

CONCLUSION

Mild lumbar pain does not rule out an extensive aortic dissection in a patient with cardiovascular risk factors. Computed tomography angiography made it possible to identify a type B dissection with marked dilatation of the descending aorta and to guide endovascular treatment after initial stabilization. The clinical improvement described should be complemented by clinical and imaging surveillance to assess the course of the treated aorta and of the residual dissection.

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CONFLICT OF INTEREST

The corresponding author declares no conflicts of interest.

AUTHOR CONTRIBUTIONS

Conceptualization: Karen Salinas, Ariana Torres.

Investigation: Karen Salinas, Ariana Torres.

Methodology: Karen Salinas, Ariana Torres.

Project administration: Karen Salinas, Ariana Torres.

Writing – original draft: Karen Salinas, Ariana Torres.

Writing – review and editing: Karen Salinas, Ariana Torres.

ETHICAL CONSIDERATIONS AND INFORMED CONSENT

Informed consent was obtained from the patient for the publication of this case report and the accompanying images.