

Case Report

Incidental Discovery of a type B Aortic Dissection: About Two Cases

Amal EL Ouarradi*, Ilham Bensahi, Fatimazahra Merzouk, Sara Oualim, Maroua Ghayate, Rachida Habbal and Mohamed Sabry

Department of Cardiology, Mohammed VI University of Health Sciences, Mohammed VI International University Hospital, Casablanca, Morocco

Abstract

A Type B aortic dissection originates distal to the left subclavian artery and involves the descending aorta. It accounts for 25-40% of all aortic dissections. Clinical manifestations may include back, abdominal or chest pain, syncope or refractory hypertension, signs related to complications such as lower limb ischemia or neurological signs. However, acute asymptomatic forms are rare. In this report, we present two clinical cases of patients with incidentally discovered asymptomatic aortic dissections.

Keywords: Aortic dissection; Aorta; Incidental discovery; Type B Stanford

Introduction

The clinical presentation of patients with type B aortic dissection can be diverse and may mimic a wide range of other disorders. The classic presentation is acute chest or interscapular pain, which is present in approximately 80% of patients with aortic dissection.

In some cases, it may have a non-specific presentation or no symptoms at all, which may delay the diagnosis and management of this life-threatening emergency.

We present two clinical cases of perfectly asymptomatic patients who presented for a routine checkup that incidentally revealed an aortic dissection. The present work aims to highlight the importance of routinely evaluating the aortic segments.

*Corresponding author: Amal EL Ouarradi, Department of Cardiology, Mohammed VI University of Health Sciences, Mohammed VI International University Hospital, Casablanca, Morocco, Email: amal.elouarradi@gmail.com

Citation: Ouarradi AEL, Bensahi I, Merzouk F, Oualim S, Ghayate M, et al. (2023) Incidental Discovery of a type B Aortic Dissection: about Two Cases. J Angiol Vasc Surg 8: 101.

Received: March 17, 2023; **Accepted:** March 31, 2023; **Published:** April 06, 2023

Copyright: © 2023 Ouarradi AEL, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Case 1: A 50-year-old patient with a history of high blood pressure for 4 years under treatment (ACEI and CCB) was admitted for a routine checkup. The patient was eupneic with no signs of Marfan's syndrome. He was 180 cm tall and weighed 90 kg, and his blood pressure was symmetrical in both arms at around 135/80 mm Hg. He had no signs of heart failure. His heart auscultation found a regular rhythm and no audible murmur, and the rest of the physical examination was unremarkable.

His EKG showed a regular rhythm, no repolarization disorder, or signs of left ventricular hypertrophy. His routine checkup also included a transthoracic echocardiography that revealed a dilation of all heart chambers but with a preserved left ventricular ejection fraction. Luckily, the abdominal aorta was swept during ultrasound and was found to be partially dilated, measuring 50 mm. After that, an aortic CT angiography confirmed a Stanford type B aortic dissection (Figure 1).

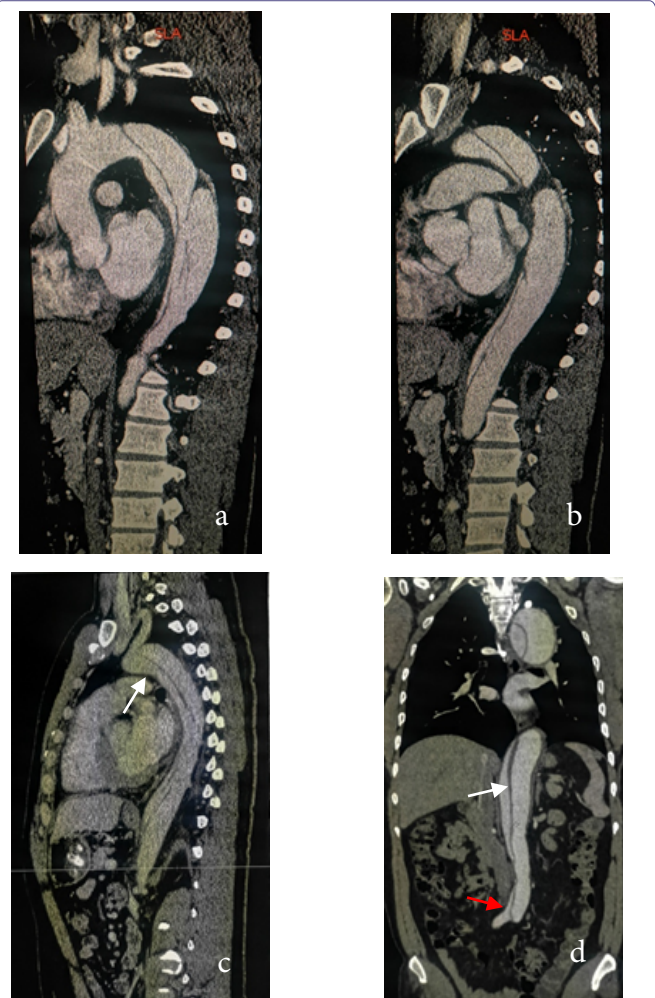


Figure 1: Sagittal (a-b-c) and coronal (d) reconstruction aortic CT angiography images with arterial contrast shows an intimal flap (with arrow) in the thoracic aorta, with extension into the iliac bifurcation (red arrow).

Case 2: A 38-year-old active smoker with a recently discovered asymptomatic high blood pressure was evaluated. Considering his young age, secondary hypertension was suspected, and an etiologic investigation was initiated. Among the radiological checkup, a renal artery ultrasound was performed and came back with no abnormalities. However, it showed a dilated abdominal aorta measuring 40 mm, with an abnormal aliasing in Doppler color with intimal flap.

On clinical assessment, the patient was hemodynamically stable, with no signs of Marfan's Syndrome. He was 178 cm tall and weighed 78 kg, and his blood pressure was 140/80 mmHg in both arms. The cardiovascular, pleuropulmonary, and abdominal examination were normal. An aortic CT angiography with arterial contrast showed a Stanford type B aortic dissection (Figure 2). Additional lab tests were performed in order to look for an autoimmune disease or a connective tissue disease and turned out to be normal.

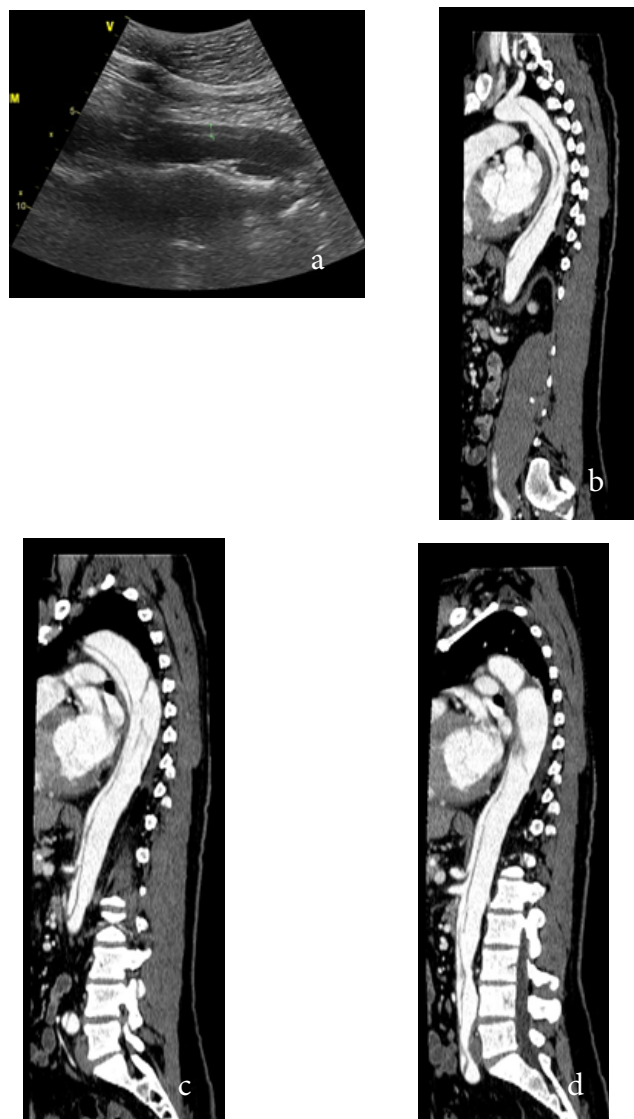


Figure 2: a: Abdominal vascular ultrasonography showing two intimal flaps in the abdominal aorta (head of arrow); b,c,d: coronal reconstruction abdominal aortic angiography images shows many intimas' flaps (dark lines) with true lumen anteriorly and false lumen is posteriorly, extending to iliac arteries.

Discussion

Aortic dissection results from a tear in the intimal arterial layer, which allows blood to propagate within the medial layer, creating a flap that divides the aorta into a true lumen and a false lumen. The Stanford classification is the most commonly used to describe aortic dissection, based on the involvement of the ascending aorta: type A dissection involves the ascending aorta, while type B does not. The most common site for the proximal intimal tear in type B is just distal to the origin of the left subclavian artery [1,2].

Type A dissection has a high early mortality within the first 48 hours, and early surgical intervention is usually indicated. Type B, which accounts for 25 to 40% of all dissections, has better early outcomes with 65% of patients surviving one year. However, late outcomes are poor, often due to dissection-related complications, with only 50% surviving after five years [3].

Complicated forms of acute aortic dissection type B represent 25% of cases leading to poor perfusion of organs (medullary, renal, digestive, or lower limbs) or aortic rupture. The later evolution of this is an aortic aneurysm [4,5].

Aortic dissection is defined as "acute" within 14 days of symptom onset, "subacute" between two weeks and three months, and "chronic" after three months [5].

Risk factors for aortic dissection are systemic hypertension (found in 80% of aortic dissection cases), advanced age, diabetes, dyslipidemia, stress, family history of aortic disease (a first-degree relative with a history of aneurysm or aortic dissection), and the existence of connective tissue abnormalities (Marfan's disease, Ehlers-Danlos Syndrome, Loeys-Dietz syndrome), hence the interest of genetic counseling in patients under 40 years of age [5,6].

The clinical presentation of type B aortic dissection is variable according to its extent and the involvement of other vascular axes (renal, medullary, intestinal, or lower limb ischemia) [7].

Pain is present in 80% of cases and can be dorsal, thoracic, interscapular, or abdominal. Asymptomatic forms are exceptional. According to the literature, only 14 cases of completely asymptomatic aortic dissection with incidental findings are described, with 11 cases being type A and 3 cases being type B. They may be underestimated as they are not diagnosed in the acute phase and are discovered during the progression to aortic aneurysm [7,8].

Multidetector aortic CT angiography with arterial contrast is the preferred method to confirm the diagnosis of aortic dissection, specify its extension, and evaluate complications. It also specifies the acute, subacute, or chronic nature of the aortic dissection [8].

Ultrasound allows visualization of some parts of the aorta, such as the initial aorta, aortic cross, descending aorta, and abdominal aorta. It rarely confirms the diagnosis of type B aortic dissection. However, it can help measure the aorta and therefore suspect a disease of the aorta (dissection or aneurysm of the aorta) [7,8].

The goals of treatment for type B aortic dissection are to maintain or restore perfusion of vital organs and prevent both dissection progression and aortic rupture. Therefore, it is important to conduct a risk assessment at an early stage to determine the benefits of medical, endovascular, or surgical intervention.

Medical management with antihypertensive agents is the first-line treatment for patients with uncomplicated type B aortic dissection. The goal is to reduce systolic blood pressure to between 100 and 120 mm Hg and heart rate below 60 beats/min. The initial treatment includes beta-blockers and calcium channel blockers, with the possibility of adding renin-angiotensin inhibitors if blood pressure control is insufficient. Additionally, it is important to systematically provide symptomatic pain treatment, as it may contribute to resistant hypertension. [5,9-11].

Endovascular treatment is indicated in complicated acute forms. A stent is placed to close the primary entry tear, reducing the flow in the false lumen and restoring the flow in the true lumen [12].

Open surgery is now only occasionally indicated when the endovascular technique is difficult or has failed. Its urgent indication remains an open rupture of the aorta, which is often a dramatic situation [13].

Our first case had an uncomplicated asymptomatic type B aortic dissection. We decided to treat him medically. The subsequent follow-up was good with stabilization and thrombosis of the false channel.

The second case had renal artery involvement, and endovascular treatment was proposed in addition to medical treatment. Unfortunately, the patient refused and disappeared since.

Conclusion

Asymptomatic forms of type B aortic dissection are probably common and undiagnosed, and often discovered in the aortic aneurysm stage. A careful study of the abdominal aorta must be carried out when a cardiac, abdominal, or renal ultrasound is performed to detect this serious pathology and treat it properly. In case of any doubt, multidetector computed tomography of the aorta with arterial contrast should be performed.

Funding Support and Author Disclosures

The authors have reported that they have no relationships relevant to the contents of this paper to disclose.

References

1. Sayed A, Munir M, Bahbah EI (2020) Aortic Dissection: A Review of the Pathophysiology, Management & Prospective Advances. *Curr Cardiol Rev* 17: 230421186875.
2. Evangelista A, Isselbacher EM, Bossone E, Gleason TG, Eusanio MD, et al. (2018) Insights from the international registry of acute aortic dissection: a 20-year experience of collaborative clinical research. *Circulation* 137: 1846-1860.
3. Cooper M, Hicks C, Ratchford EV, Salameh MJ, Malas M (2016) Diagnosis and treatment of uncomplicated type B aortic dissection. *Vascular Medicine* 21: 547-552.
4. Terzi F, Gianstefani S, Fattori R (2018) Type B aortic dissection: it should be treated. *J Cardiovasc Med (Hagerstown)* 19: 50-53.
5. Munshi B, Ritter JC, Doyle BJ, Norman PE (2020) Management of acute type B aortic dissection. *ANZ J Surg* 145: 202-207.
6. Rimbau V, Böckler D, Brunkwall J et al. (2017) Editor's choice management of descending thoracic aorta diseases: clinical practice guidelines of the European Society for Vascular Surgery (ESVS). *Eur J Vasc Endovasc Surg* 53: 4-52.
7. Wang J, Yao C, Wu Y, Lai B (2020) Asymptomatic long-segmental type A aortic dissection diagnosed by transthoracic echocardiography: A case report and literature review. *J Clin Ultrasound* 48: 574-578.
8. Manea MM, Dragos D, Antonescu F, Sirbu AG, Tiron AT, et al. (2019) Aortic Dissection: An Easily Missed Diagnosis when Pain Doesn't Hold the Stage. *Am J Case Rep* 20: 1788-1792
9. Czerny M, Schmidli J, Adler S, van den Berg JC, Bertoglio L, et al. (2019) Current options and recommendations for the treatment of thoracic aortic pathologies involving the aortic arch: an expert consensus document of the European Association for Cardio-Thoracic surgery (EACTS) and the European Society for Vascular Surgery (ESVS). *Eur J Cardiothorac Surg* 55: 133-162.
10. Kaji S (2019) Acute medical management of aortic dissection. *Gen Thorac Cardiovasc Surg* 67: 203-207.
11. Trimarchi S, Eagle KA, Nienaber CA, Pyeritz RE, Jonker FHW, et al. (2010) Importance of refractory pain and hypertension in acute type B aortic dissection: insights from the International Registry of Acute Aortic Dissection (IRAD). *Circulation* 122: 1283-1289.
12. Hossack M, Patel S, Gambardella I, Neequaye S, Antoniou GA, et al. (2019) Endovascular vs. Medical Management for Uncomplicated Acute and Sub-acute Type B Aortic Dissection: A Meta-analysis. *Eur J VascEndovasc Surg* 59: 794-807.
13. Yuan X, Mitsis A, Ghonem M, Iakovakis I, Nienaber CA (2018) Conservative management versus endovascular or open surgery in the spectrum of type B aortic dissection. *J Vis Surg* 4: 59.



- Advances In Industrial Biotechnology | ISSN: 2639-5665
- Advances In Microbiology Research | ISSN: 2689-694X
- Archives Of Surgery And Surgical Education | ISSN: 2689-3126
- Archives Of Urology
- Archives Of Zoological Studies | ISSN: 2640-7779
- Current Trends Medical And Biological Engineering
- International Journal Of Case Reports And Therapeutic Studies | ISSN: 2689-310X
- Journal Of Addiction & Addictive Disorders | ISSN: 2578-7276
- Journal Of Agronomy & Agricultural Science | ISSN: 2689-8292
- Journal Of AIDS Clinical Research & STDs | ISSN: 2572-7370
- Journal Of Alcoholism Drug Abuse & Substance Dependence | ISSN: 2572-9594
- Journal Of Allergy Disorders & Therapy | ISSN: 2470-749X
- Journal Of Alternative Complementary & Integrative Medicine | ISSN: 2470-7562
- Journal Of Alzheimers & Neurodegenerative Diseases | ISSN: 2572-9608
- Journal Of Anesthesia & Clinical Care | ISSN: 2378-8879
- Journal Of Angiology & Vascular Surgery | ISSN: 2572-7397
- Journal Of Animal Research & Veterinary Science | ISSN: 2639-3751
- Journal Of Aquaculture & Fisheries | ISSN: 2576-5523
- Journal Of Atmospheric & Earth Sciences | ISSN: 2689-8780
- Journal Of Biotech Research & Biochemistry
- Journal Of Brain & Neuroscience Research
- Journal Of Cancer Biology & Treatment | ISSN: 2470-7546
- Journal Of Cardiology Study & Research | ISSN: 2640-768X
- Journal Of Cell Biology & Cell Metabolism | ISSN: 2381-1943
- Journal Of Clinical Dermatology & Therapy | ISSN: 2378-8771
- Journal Of Clinical Immunology & Immunotherapy | ISSN: 2378-8844
- Journal Of Clinical Studies & Medical Case Reports | ISSN: 2378-8801
- Journal Of Community Medicine & Public Health Care | ISSN: 2381-1978
- Journal Of Cytology & Tissue Biology | ISSN: 2378-9107
- Journal Of Dairy Research & Technology | ISSN: 2688-9315
- Journal Of Dentistry Oral Health & Cosmesis | ISSN: 2473-6783
- Journal Of Diabetes & Metabolic Disorders | ISSN: 2381-201X
- Journal Of Emergency Medicine Trauma & Surgical Care | ISSN: 2378-8798
- Journal Of Environmental Science Current Research | ISSN: 2643-5020
- Journal Of Food Science & Nutrition | ISSN: 2470-1076
- Journal Of Forensic Legal & Investigative Sciences | ISSN: 2473-733X
- Journal Of Gastroenterology & Hepatology Research | ISSN: 2574-2566
- Journal Of Genetics & Genomic Sciences | ISSN: 2574-2485
- Journal Of Gerontology & Geriatric Medicine | ISSN: 2381-8662
- Journal Of Hematology Blood Transfusion & Disorders | ISSN: 2572-2999
- Journal Of Hospice & Palliative Medical Care
- Journal Of Human Endocrinology | ISSN: 2572-9640
- Journal Of Infectious & Non Infectious Diseases | ISSN: 2381-8654
- Journal Of Internal Medicine & Primary Healthcare | ISSN: 2574-2493
- Journal Of Light & Laser Current Trends
- Journal Of Medicine Study & Research | ISSN: 2639-5657
- Journal Of Modern Chemical Sciences
- Journal Of Nanotechnology Nanomedicine & Nanobiotechnology | ISSN: 2381-2044
- Journal Of Neonatology & Clinical Pediatrics | ISSN: 2378-878X
- Journal Of Nephrology & Renal Therapy | ISSN: 2473-7313
- Journal Of Non Invasive Vascular Investigation | ISSN: 2572-7400
- Journal Of Nuclear Medicine Radiology & Radiation Therapy | ISSN: 2572-7419
- Journal Of Obesity & Weight Loss | ISSN: 2473-7372
- Journal Of Ophthalmology & Clinical Research | ISSN: 2378-8887
- Journal Of Orthopedic Research & Physiotherapy | ISSN: 2381-2052
- Journal Of Otolaryngology Head & Neck Surgery | ISSN: 2573-010X
- Journal Of Pathology Clinical & Medical Research
- Journal Of Pharmacology Pharmaceutics & Pharmacovigilance | ISSN: 2639-5649
- Journal Of Physical Medicine Rehabilitation & Disabilities | ISSN: 2381-8670
- Journal Of Plant Science Current Research | ISSN: 2639-3743
- Journal Of Practical & Professional Nursing | ISSN: 2639-5681
- Journal Of Protein Research & Bioinformatics
- Journal Of Psychiatry Depression & Anxiety | ISSN: 2573-0150
- Journal Of Pulmonary Medicine & Respiratory Research | ISSN: 2573-0177
- Journal Of Reproductive Medicine Gynaecology & Obstetrics | ISSN: 2574-2574
- Journal Of Stem Cells Research Development & Therapy | ISSN: 2381-2060
- Journal Of Surgery Current Trends & Innovations | ISSN: 2578-7284
- Journal Of Toxicology Current Research | ISSN: 2639-3735
- Journal Of Translational Science And Research
- Journal Of Vaccines Research & Vaccination | ISSN: 2573-0193
- Journal Of Virology & Antivirals
- Sports Medicine And Injury Care Journal | ISSN: 2689-8829
- Trends In Anatomy & Physiology | ISSN: 2640-7752

Submit Your Manuscript: <https://www.heraldopenaccess.us/submit-manuscript>