
A Case of Syncope due to Atrioventricular Valve Thrombus

Tirath Patel*

Department of Medicine, American University of Antigua, Antigua and Barbuda

***Corresponding author:** Tirath Patel, Department of Medicine, American University of Antigua, Antigua and Barbuda.

E-mail: tirathp611@gmail.com

Received: March 08, 2023; **Accepted:** March 17, 2023; **Published:** April 05, 2023

Abstract

We present the case of a 65-year-old male who presented to the emergency department with syncope and dyspnea. The patient was found to have an atrioventricular valve thrombus, which was likely the cause of his symptoms. The patient was treated with anticoagulation therapy and underwent surgical intervention to remove the thrombus. This case highlights the importance of prompt diagnosis and treatment of atrioventricular valve thrombus in patients presenting with syncope.

Introduction

Syncope due to Atrioventricular Valve Thrombus is a medical condition that can be life-threatening if not diagnosed and treated promptly [1]. The condition occurs when a blood clot forms on the heart valve, which can lead to a blockage of blood flow to the rest of the body. The resulting lack of oxygen and nutrients can cause fainting, dizziness, or even sudden cardiac arrest. The atrioventricular valves are located between the atria and ventricles of the heart and play a crucial role in ensuring proper blood flow through the heart. When a thrombus or blood clot forms on the valve, it can cause a disruption in the normal flow of blood, leading to a range of symptoms and potentially severe complications [2]. Syncope, or fainting, is a common symptom of atrioventricular valve thrombus and can be a sign of a more serious underlying condition. Other symptoms may include chest pain, shortness of breath, and palpitations.

A diagnosis of atrioventricular valve thrombus typically involves an electrocardiogram (ECG), echocardiogram, or other imaging tests to visualize the clot and determine its size and location. Treatment may involve anticoagulant medications, such as heparin or warfarin, or surgical intervention to remove the clot or repair the valve [3]. Early detection and treatment of atrioventricular valve thrombus are critical to prevent complications and improve outcomes [4]. If left untreated, the condition can lead to serious health consequences, including stroke, heart attack, and even death. Overall, a case of syncope due to atrioventricular valve thrombus is a potentially life-threatening condition that requires prompt medical attention and intervention. Understanding the symptoms, diagnosis, and treatment options for this condition is critical for healthcare providers and patients alike to ensure the best possible outcomes [5].

Case Presentation

A 65-year-old male with a past medical history of hypertension and dyslipidemia presented to the emergency department with syncope and dyspnea. He had no history of prior cardiovascular disease or thromboembolic events. On physical examination, he was hypotensive with a blood pressure of 90/60 mmHg and tachycardic with a heart rate of 120 beats per minute. His respiratory rate was 20 breaths per minute and his oxygen saturation was 92% on room air. A cardiac examination revealed a holosystolic murmur and an irregular rhythm. An electrocardiogram (ECG) revealed atrial fibrillation with rapid ventricular response. Laboratory investigations were notable for an elevated D-dimer level of 500 ng/mL (normal range < 250 ng/mL). A computed tomography (CT) scan of the chest revealed a filling defect in the left atrium, suggestive of a thrombus. Transthoracic echocardiography (TTE) revealed a large thrombus attached to the mitral valve leaflet, causing significant obstruction of the mitral valve orifice. The thrombus was causing severe mitral regurgitation and was likely the cause of the patient's syncope and dyspnea. The patient was started on intravenous heparin and underwent urgent surgical intervention to remove the thrombus. The surgery was successful, and the patient was transitioned to oral anticoagulation therapy with warfarin. The patient had an uneventful postoperative course and was discharged from the hospital on postoperative day 6.

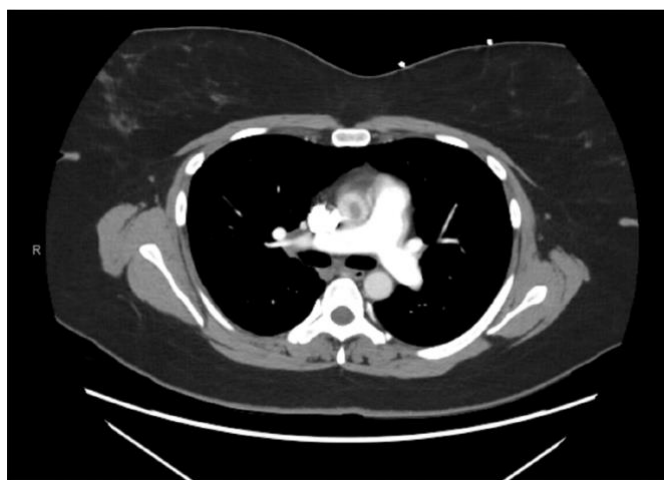


Figure 1: CT scan representing the valvular thrombus displaced.

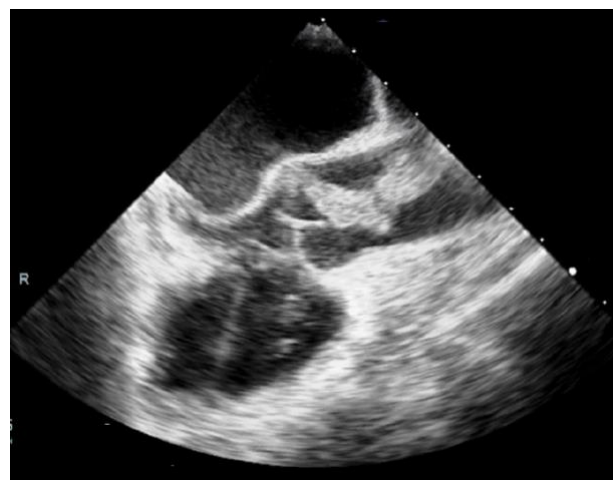


Figure 2: Echocardiogram showing AV thrombus.

Discussion

Atrioventricular valve thrombus is a rare but potentially life-threatening condition that can cause syncope and other cardiovascular symptoms [6]. The diagnosis of atrioventricular valve thrombus can be challenging, as the symptoms can be nonspecific, and the condition is often asymptomatic [7]. The presence of an atrial fibrillation with rapid ventricular response and elevated D-dimer levels should raise suspicion for atrioventricular valve thrombus in patients presenting with syncope. TTE is the diagnostic modality of choice for the detection of atrioventricular valve thrombus [8]. Treatment typically involves anticoagulation therapy and surgical intervention. Anticoagulation therapy is used to prevent further thrombus formation and embolization [9], while surgical intervention is necessary for the removal of the thrombus in cases of significant obstruction or high risk of embolization. The prognosis of atrioventricular valve thrombus is generally good with prompt diagnosis and treatment [10].

Conclusion

In conclusion, a case of syncope due to atrioventricular valve thrombus is a serious medical condition that can have severe consequences if not diagnosed and treated promptly. The formation of a blood clot on the heart valve can lead to a disruption in normal blood flow, causing a range of symptoms such as fainting, chest pain, shortness of breath, and palpitations. Early detection and treatment of atrioventricular valve thrombus are essential to prevent complications and improve outcomes. Healthcare providers must remain vigilant and consider this condition as a possible diagnosis when evaluating patients with syncope or other related symptoms. Appropriate imaging tests and medical interventions such as anticoagulant medications or surgery may be necessary to manage the condition effectively. In summary, a case of syncope due to atrioventricular valve thrombus highlights the importance of timely medical evaluation and intervention for patients presenting with symptoms suggestive of cardiac events. Increased awareness and understanding of this condition among healthcare providers and the general public can help improve outcomes and prevent potentially life-threatening complications.

REFERENCES

1. Rouleau SG, Brady WJ, Koyfman A, et al. Transcatheter aortic valve replacement complications: A narrative review for emergency clinicians. *The American Journal of Emergency Medicine*. 2022.
2. Toggweiler S, Schmidt K, Paul M, et al. Valve thrombosis 3 years after transcatheter aortic valve implantation. *International journal of cardiology*. 2016; 207: 122-124.
3. Von Dohlen TW, Frank MJ. Presyncope and syncope: how to end the cause and avoid staggering costs. *Postgraduate Medicine*. 1989; 86: 85-96.
4. Marvin HM, Sullivan AG. Clinical observations upon syncope and sudden death in 2 relation to aortic stenosis. *American Heart Journal*. 1935; 10: 705-735.
5. Tarzia V, Bortolussi G, Rubino M, et al. Evaluation of prosthetic valve thrombosis by 64-row multi-detector computed tomography. *J Heart Valve Dis*. 2015; 24: 210-213.
6. Davutoglu V, Soydinc S, Celkan A, et al. Left ventricular free-floating ball thrombus complicating aortic valve stenosis. *Journal of Heart Valve Disease*. 2004; 13: 197-199.
7. Achouh P, Jemel A, Chauderge A, et al. Aortic biological valve thrombosis in an HIV positive patient. *The Annals of Thoracic Surgery*. 2011; 91: 90-91.
8. Vinnakota S, Jentzer JC, Luis SA. Thrombolysis for COVID-19-associated bioprosthetic mitral valve thrombosis with shock. *European heart journal*. 2021; 42: 4093.
9. Olesen KH, Rygg IH, Wennevold A, et al. Long-term follow-up in 262 patients after aortic valve replacement with the Lillehei {Kaster prosthesis. Overall results and prosthesis-related complications. *European Heart Journal*. 1986; 7: 808-816.
10. Alajaji W, Hornick JM, Malek E, et al. The characteristics and outcomes of native aortic valve thrombosis: a systematic review. *Journal of the American College of Cardiology*. 2021; 78: 811-824.