



Case Report / Olgu Sunumu

Isolated aneurysm of right sinus of Valsalva: A rare case report

İzole sağ sinüs Valsalva anevrizması: Nadir bir olgu sunumu

Taner İyigün¹, Barış Timur¹, Mugisha Kyaruzi¹, Mehmet Kaya¹

Department of Cardiovascular Surgery, University of Health Sciences, İstanbul Mehmet Akif Ersoy Thoracic and Cardiovascular Surgery Training and Research Hospital, İstanbul, Turkey

ABSTRACT

Isolated sinus of Valsalva aneurysm is a rare congenital pathology associated with a life-threatening course when untreated. In this article, we report a 60-year-old male patient with an isolated aneurysm of right sinus of Valsalva treated by modified Bentall procedure. The patient with cardiac symptoms applied to our clinic for further evaluation. Enhanced computed tomographic angiography and transthoracic echocardiography revealed an isolated aneurysm of right sinus of Valsalva. An optimal management for the condition is not clear, while early surgical intervention is recommended due to potentially life-threatening complications.

Keywords: Bentall procedure, computed tomographic angiography, isolated aneurysm of right sinus of Valsalva.

Aneurysm of sinus of Valsalva is a rare congenital pathology. This condition is mostly due to trauma, infective endocarditis or syphilis.^[1] It is a life-threatening condition if remains undiagnosed and untreated.^[2] It is more common in males and often diagnosed during early period of life.^[3] In this article, we report a 60-year-old male patient with an isolated sinus of Valsalva aneurysm originated from right coronary sinus which was treated with modified Bentall procedure.

CASE REPORT

A 60-year-old male patient who was an ex-smoker was referred to our center with symptoms of dyspnea (New York Heart Association Class II) and fatigue. He had hypertension. No connective tissue disorder was detected. He did not use any medications. Physical examination revealed a Grade 3 murmur at the

ÖZ

İzole sinüs Valsalva anevrizması tedavi edilmediğinde hayatı tehdit eden bir seyirle ilişkilendirilen nadir bir konjenital patolojidir. Bu yazıda, modifiye Bentall işlemi ile tedavi edilen izole sağ sinüs Valsalva anevrizması olan 60 yaşında bir erkek hasta sunuldu. Kardiyak semptomları olan hasta ayrıntılı değerlendirme için kliniğimize başvurdu. Geliştirilmiş bilgisayarlı tomografik anjiyografi ve transtorasik ekokardiyografide izole sağ sinüs Valsalva anevrizması görüldü. Durum için en uygun tedavi kesin olmasa da hayatı tehdit edebilecek komplikasyonlar nedeniyle erken cerrahi girişim önerilir.

Anahtar sözcükler: Bentall işlemi, bilgisayarlı tomografik anjiyografi, izole sağ sinüs Valsalva anevrizması.

upper right and left sternal edge. Chest X-ray and electrocardiogram showed no abnormalities. A written informed consent was obtained from the patient.

Enhanced computed tomographic angiography (CTA) and transthoracic echocardiography (TTE) revealed an isolated aneurysm of the right sinus of Valsalva with the lengths of 33×51 mm (Figure 1a, b). The aortic valve contained a bicuspid structure with moderate regurgitation. Aortic diameter was 64 mm at the level of sinuses of Valsalva. Ascending aorta was 38 mm at the level of pulmonary truncus. The patient was referred for operation.

A median sternotomy was performed. The aneurysm was found at the anterior site of the aortic root (Figure 2a). The right coronary artery was originated from the edge of the aneurysm. Cardiopulmonary bypass was initiated using aortic and two-staged

Received: September 30, 2018 Accepted: February 05, 2019 Published online: April 24, 2019

Correspondence: Taner İyigün, MD, İstanbul SBÜ Mehmet Akif Ersoy Göğüs Kalp ve Damar Cerrahisi Eğitim ve Araştırma Hastanesi, Kalp ve Damar Cerrahisi Kliniği, 34303 Küçükçekmece, İstanbul, Turkey. Tel: +90 212 - 692 20 00 e-mail: taneriyi@gmail.com

Cite this article as:

İyigün T, Timur B, Kyaruzi M, Kaya M. Isolated aneurysm of right sinus of Valsalva: A rare case report. Turk Gogus Kalp Dama 2019;27(2):227-229

©2019 All right reserved by the Turkish Society of Cardiovascular Surgery.

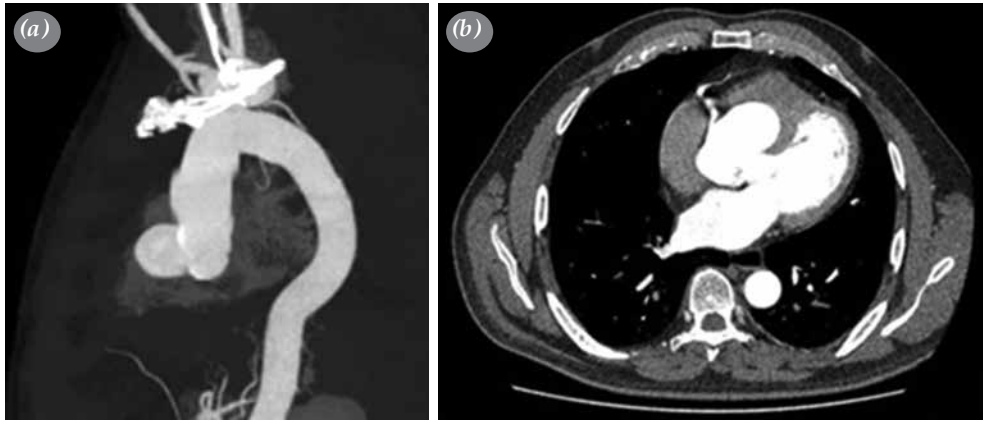


Figure 1. (a, b) Preoperative image of computed tomographic three-dimensional angiography.

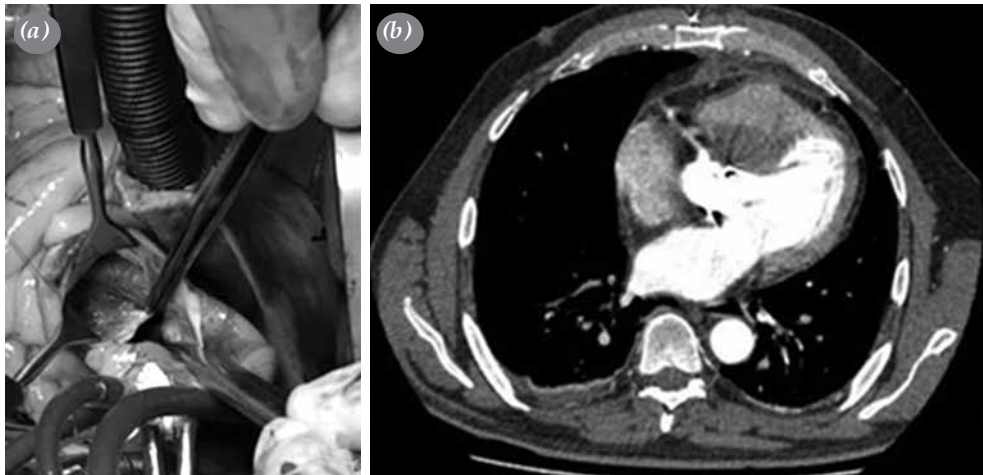


Figure 2. (a) Intraoperative image of aneurysm and (b) postoperative image of control computed tomographic angiography.

atrial cannulations. Aortotomy was performed. The aortic valve was resected, along with the ascending aorta. Coronary buttons were mobilized. Modified Bentall procedure was performed using 27 mm St. Jude valved graft (Masters HP Series Valved Graft with Gelweave Valsalva Technology, St. Jude Medical, MN, USA). The aneurysm of sinus of Valsalva was plicated. The postoperative course was uneventful. He was discharged with warfarin and acetylsalicylic acid. Postoperative CTA showed an adequate shape of the ascending aorta (Figure 2b).

DISCUSSION

Isolated sinus of Valsalva aneurysm is a rare condition. The common causes may be congenital, infectious, traumatic or degenerative. Congenital aneurysms are usually confined to one sinus and frequently associated with other congenital diseases.^[4]

In this patient, the aneurysm was probably congenital, extracardiac and localized only to the right sinus of Valsalva. It is associated with a bicuspid aortic valve with moderate valvular regurgitation. The patient was not diagnosed with any other condition.

Moustafa et al.^[5] showed in their series that TTE is the choice of imaging modality for the early diagnosis and prediction of the unruptured sinus of Valsalva aneurysms, because it is noninvasive and can be easily performed. Transthoracic echocardiography is highly sensitive in diagnosing aneurysms. Similarly, in our patient, we diagnosed the condition using TTE and confirmed the result with a CTA. Ascending aorta, aortic arch and descending thoracic aorta were also evaluated using CTA.

An isolated extracardiac aneurysm of the sinus of Valsalva is rare. Although an optimal management for

the situation is not clear, early surgical intervention is recommended due to potentially life-threatening complications.^[6] Improvements in surgical technique during the past years have resulted in low complication rates. Therefore, early surgical reconstruction is recommended in this subset of cases.^[2,7]

Different surgical approaches for isolated sinus of Valsalva aneurysms were described.^[4,6] Our patient also had aortic valve insufficiency and mild ascending aorta dilatation. Therefore, we preferred the modified Bentall procedure.

In conclusion, we believe that isolated sinus of Valsalva aneurysms should be treated by surgery as soon as possible after diagnosis since they are life-threatening conditions.

Declaration of conflicting interests

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding

The authors received no financial support for the research and/or authorship of this article.

REFERENCES

1. Topi B, John J, Agarwal A, Nerella N, Shetty V, Sadiq A, et al. An uncommon cause of a continuous murmur. *Exp Clin Cardiol* 2012;17:148-9.
2. Darabian S, Ahmadi SH, Abbasi K, Abbasi A, Shirzad M, Azadi M. Giant unruptured noncoronary sinus of Valsalva aneurysm. *J Card Surg* 2009;24:351-3.
3. Dubey L. Ruptured sinus of Valsalva: an unusual cause of heart failure. *J Cardiovasc Echogr* 2018;28:65-66.
4. Nakagiri K, Kadowaki T, Morimoto N, Murakami H, Yoshida M, Mukohara N. Aortic root reimplantation for isolated sinus of Valsalva aneurysm in the patient with Marfan's syndrome. *Ann Thorac Surg* 2012;93:e49-51.
5. Moustafa S, Mookadam F, Cooper L, Adam G, Zehr K, Stulak J, et al. Sinus of Valsalva aneurysms--47 years of a single center experience and systematic overview of published reports. *Am J Cardiol* 2007;99:1159-64.
6. Jebara VA, Chauvaud S, Portoghese M, Uva MS, Acar C, Farge A, et al. Isolated extracardiac unruptured sinus of Valsalva aneurysms. *Ann Thorac Surg* 1992;54:323-6.
7. Yadav A, Mathur R, Devgarha S, Abraham V, Sisodia A. Surgery for ruptured sinus of Valsalva aneurysm: Five-year experience with 19 patients. *Turk Gogus Kalp Dama* 2014;22:729-33.