Right Atrial Blood Cyst: A Very Rare Finding in Elderly Patients: Case Report

Sağ Atriyal Kan Kisti: Yaşlı Hastalarda Çok Nadir Bir Bulgu

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ABSTRACT Intracardiac blood cysts are generally observed in infants and spontaneously disappear during the first six months of life. Therefore, they are rarely seen in adults. The most of blood cysts are located in the left-side of heart and on atrioventricular valves. In the literature, there are a small number of cases of blood cysts in the right atrium in adults. They are generally congenital origin and their possible etiology is invaginations of atrial endotelium into the stroma of atrioventricular valves. The blood cysts leading to complications such as valve dysfunction and ventricular outflow tract obstruction should be removed surgically. However, there is no consensus concerning the optimal management of asymptomatic patients. In this paper, we reported a 79-years-old female patient who had a blood cyst in the right atrium and attached interatrial septum.

Key Words: Echocardiography; cysts; heart atria

ÖZET Kalp içi kan kistleri genellikle bebeklerde görülür ve hayatın ilk altı ayı içinde spontan olarak kaybolur. Bu nedenle, erişkinlerde çok nadir rastlanırlar. Kan kistlerinin çoğu sol kalpte ve atrioventriküler kapaklar üzerinde yerleşmektedir. Literatürde, erişkinlerde az sayıda sağ atriyum kan kisti vakası vardır. Genellikle, konjenital kaynaklıdırlar ve olası etyoloji atriyal endotelyumun atriyoventriküler kapakların stroması içine invajine olmasıdır. Kapak disfonksiyonu ve ventrikül çıkış yolu obstrüksiyonu gibi komplikasyonlara yol açan kan kistleri cerrahi olarak çıkarılmalıdır. Bununla birlikte, asemptomatik hastaların optimal medikal tedavisi hakkında hiçbir görüş birliği yoktur. Bu vaka takdiminde, sağ atriyumda ve interatriyal septuma yapışmış bir kan kisti olan 79 yaşında bir kadın hastayı bildirdik.

Anahtar Kelimeler: Ekokardiyografi; kistler; kalp atria

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Intracardiac blood cyst is a rarely encountered entity in adults. They are mainly seen in infants and dissappear during the first six months of life.[1] Generally, they are asymptomatic, congenital origin and detected on atrioventricular heart valves.[2] Their possible etiology is microscopical invaginations of atrial endotelium into the stroma of atrioventricular valves. The blood cysts which lead to complications such as valve dysfunction and ventricular outflow tract obstruction should be removed surgically. However, there is no consensus concerning the optimal management of asymptomatic patients. In this case, we described a 79-year-old female patient with blood cyst attached to the interatrial septum in the right atrium.

CASE REPORT

A 79-year-old woman presented with crescendo exertional dyspnea for a week, was normotensive and had no history of heart failure, myocardial infarction or angina. Physical examination revealed bilateral crepitate rale in basal and mid areas of lungs. The electrocardiographic findings were normal. The chest roentgenogram demontsrated the infiltrations in basal-mid areas of lungs. Complete blood count revealed a haemoglobin of 6.7 g/dL, a hematocrit of 21.3% and a leukocyte count of 9300/μL. Biochemical tests were within normal limits. An echocardiography was ordered to further evaluation of heart functions. It was demonstrated a mobile 13x13 mm cystic circular mass attached to right interatrial septum with normal systolic and diastolic left ventricular function (Figure 1A and B). The mass well circumscribed, had a thin wall and echolucent core. Contrast echocardiography with agitated saline was performed to better characterization of the mass. No contrast uptake was showed into echolucent central core after administration of agitated saline (Figure 2). The patient was admitted to cardiology department and erythrocyte suspension was replaced. In addition, serologic test (indirect haemagglutination) for Echinococcus and computed tomography (CT) of the torax for pulmonary embolism were performed. The serologic test was found negative. Torax CT was found normal and pulmonary embolism was excluded. The dyspnea was progresively improved after erythrocyte suspension replacement. Therefore, we decided that dyspnea was resulted from anemia as the patient had normal left ventricular function. We diagnosed as blood-filled cyst of right atrium attached to septum based on the presence of characteristic echocardiographic findings, negative serology and normal thorax CT. Then, the patient was discharged and referred to haemotology department for further evaluation of anemia etiology.

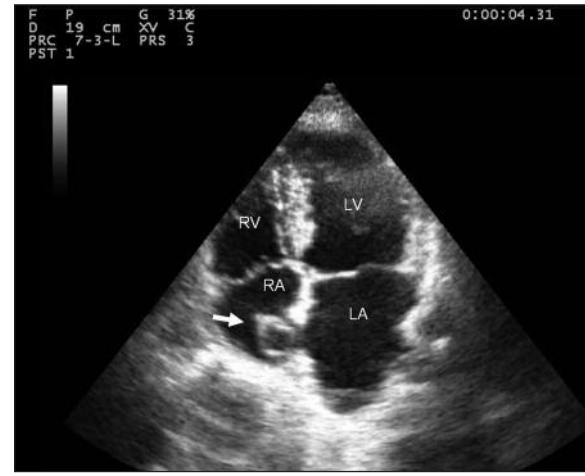

FIGURE 1A: Transthoracic echocardiography in apical four chamber view showing blood cyst (arrow) attached to the right interatrial septum. LA, left atrium; LV, left ventricle, RA, right atrium; RV, right ventricle.

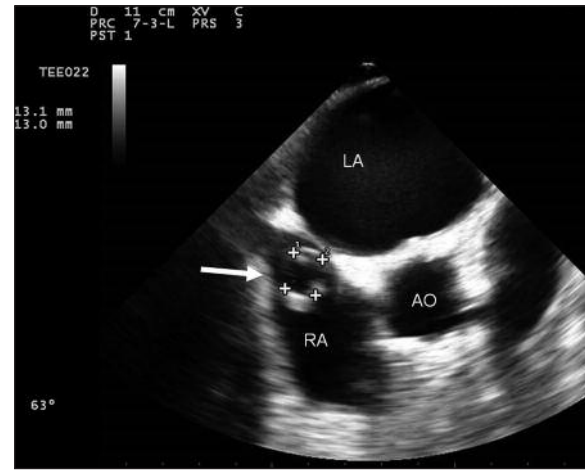

FIGURE 1B: Transesophageal echocardiography in modified short-axis projection showing 13x13 mm cystic mass (arrow) attached to interatrial septum. AO, aort; LA, left atrium; RA, right atrium.

DISCUSSION

Intracardiac blood cysts are generally observed in infants and disappear during the first six months of life.[1] Therefore, they are rarely seen in adults. The most of blood cysts are located in the left-side of heart and on atrioventricular valves.[3,4] Rarely, they originate from the righ atrium and ventricle.[1,2] The origin of blood cyst is not exactly detected yet. However, they are generally considered as a diverticuli lined by endothelium and consist non-organized blood or seroanginous fluid.[2,5] The cardiac blood cysts are generally asymptomatic but some complications rarely reported because of valve dysfunction and ventricular outflow tract obstruction.[3,4]

The differential diagnosis of right-sided cystic mass includes right atrial myxoma, abscess forma-

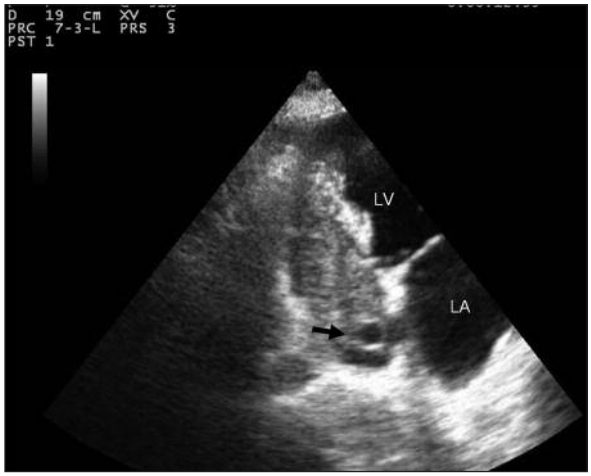

FIGURE 2: Transthoracic echocardiography in modified apical four chamber view with agitated saline. Note the absence of microbubbles in cystic cavity (arrow).

tion as a sequel of endocarditis, hydatid cyst, cavitating thrombus and blood cyst.[6] For detecting of the intracardiac mass, echocardiography is the most important technique,[1] because of various mass exhibit different findings. For example, myxomas tend to be heterogeneous and they always exhibit contrast uptake.[7] Blood cysts are seen as a well-circumscribed homogenous mass with a thin wall and echolucent core.[2] In addition, they usually exibit no contrast uptake into echolucent central core.[7] The hydatid cysts tend to be large, thin walled and septaled. Also, they are generally located in the left ventricular free wall.[8] The right-sided thrombus is usually mobile and have a snake-like or popcorn apperance as a characteristic finding. Also, they almost always are associated with pulmonary embolism. Whereas, torax CT of our patient was normal.

On the other hand, there are numerous anatomic variants that are potentially confused with pathologic structures in the right atrium. The most commonly encountered normal structures are Chiari network, eustachian valve and catheter or pacemaker leads. The Eustachian valve is a remnant of the embrylogic inferior vena cava valve and normally regresses during the embryonic development. It is a rigid, gibbous and usually immobile structure that are located at the junction of the inferior vena cava and right atrium. The Chiari network is a membranous structure that is usually fenestrated and highly mobile. It is arises near the orifice of the inferior vena cava and may terminate various site of the right atrium.[9] We excluded these anatomic variants because the mass of our patients was not related the inferior vena cava and did not contain fenestra which cause conrast uptake.

We diagnosed a blood cyst in our patient because of presence of typical echocardiography findings such as homogenous pattern of cystic fluid and absence of contrast media uptake and absence of an other history and laboratory abnormalities except for deep anemia.

There is no consensus considering the optimal management of blood cysts. Symptomatic blood cysts leading to valvular or ventricular dysfunction should be excised.[10] However, there are different opinion for asymptomatic cysts in literature. Some authors have proposed routinely surgical excision of asymptomatic blood cysts to avoid potential complications.[11] At the same time, others recommended that these cysts can be safely monitored with serial echocardiographical studies until there is a clinical symptom.

In conclusion, we described a 79-year-old female patient who has a slightly mobile blood cysts in right atrium. In adults, blood cyst is a very rare finding that our review of the literature revealed the oldest patient with blood cyst is 72 years old. We believe that blood cysts can successfully managed conservatively until appear clinical symptoms.

REFERENCES

1. Tanaka H, Ebato M, Narisawa T, Mori T, Masuda M, Suzuki T, et al. Atrial Blood Cyst With Ischemic Heart Disease. Circ J 2003; 67(1):91-2.
2. Jacob JJ, Jose J, Jojn B. Intracardiac blood-filled cysts of the heart: a rare cause of embolic stroke. Singapore Med J 2007; 48(5):e125-6.
3. Zhang C, Hu J, Ni YM, Jiang ZN, Xu HY. Giant blood cyst tumor in the left ventricular outflow tract. Chin Med J (Engl) 2007;120(12):1109-10.

4. Dumantepe M, Ak K, Mungan U, Alp I, Inan BK, Yilmaz AT. Blood cyst of the right ventricle presenting as recurrent high fever and chills in an adult. Ann Thorac Surg 2009;87(2):638-40.
5. Jose VJ, Gupta SN, Jose S, Chacko B, Abraham PK, Abraham OC, et al. Blood-filled cysts of heart. Indian Heart J 2004;56(2):174-5.
6. Agac MT, Acar Z, Turan T, Karadag B, Kul S, Erkan H. Blood cyst of tricuspid valve: an incidental finding in a patient with ventricular septal defect. Eur J Echocardiogr 2009;10(4):588-9.
7. Centella T, Moya JL, Muñoz M, Reguero EM. Giant endocardial blood cyst in the right atrium, echocardiographic and magnetic resonance imaging features. Circulation 2008; 117(25):3250-1.
8. Feigenbaum H, Armstrong WF, Ryan T. Feigenbaum's echocardiography. Masses, Tumors, and Source of Embolus. 6th ed. Philadelphia: Lippincott Williams & Wilkins; 2005. p.731-2.
9. Feigenbaum H, Armstrong WF, Ryan T. Left atrium, right atrium, and right ventricle. Feigenbaum's Echocardiography. 6th ed. Philadelphia: Lippincott Williams & Wilkins; 2005. p.181-213.
10. Paşaoğlu I, Doğan R, Demircin M, Bozer AY. Blood cyst of the pulmonary valve causing pulmonic valve stenosis. Am J Cardiol 1993; 72(5):493-4.
11. Roberts PF, Serra AJ, McNicholas KW, Shapira N, Lemone GM. Atrial blood cyst: a rare finding. Ann Thorac Surg 1996;62(3): 880-3.