NONVALVÜLER ATRİYAL FİBRİLASYON İLE İLİŞKİLİ SAĞ ATRİYAL APENDİKSTE TROMBÜS: ASLA SAĞ ATRİYAL APENDİKSİ UNUTMAYIN!

A Thrombus in Right Atrial Appendage in Association with Nonvalvular Atrial Fibrillation: Never Forget Right Atrial Appendage!

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ÖZET

Nonvalvüler atriyal fibrilasyon (NVAF) erişkinlerde en sık görülen sürekli aritmidir ve kusurlu atriyal kontraksiyonların sonucu atriyal trombüs oluşumuna neden olabilir. Sol-taraflı kardiyak trombüsler genellikle miyokard enfarktüsü, dilate kardiyomiyopati veya mitral kapak hastalığı ile ilişkilidir. Öte yandan sağ taraflı kardiyak trombüsler sekonder nedenlerden oluşabilir, daha az görülür ve literatürde birkaç sağ atriyal trombüs vaka raporu bildirilmiştir (1,2).

Sürekli AF hikayesi olan 72 yaşındaki kadın hasta, nefes darlığı yakınması nedeniyle kliniğimize başvurdu. Transözefagial ekokardiyografi de (TÖE), sağ atriyal apendikste 1.5x4.0 cm boyutunda trombüs ile birlikte her iki atriumda da spontan eko kontrast (SEK) bulgusu izlendi. Sol atriyum (SA) ve sol atriyal appendiks (SAA) taramasında herhangi bir trombüse rastlanmadı. Bu olgu sunumunda; NVAF'a tedavi yaklaşımını belirlemeden önce transözofageal ekokardiyografi ile SAA'in yanı sıra sağ atriyal apendiks muayenesinin de dikkatle yapılması gerektiğini vurgulamayı amaçladık.

Anahtar Sözcükler: *Atrial fibrilasyon; Sağ atrium; Trombüs*

ABSTRACT

Nonvalvular atrial fibrillation (NVAF) is the most common sustained arrhythmia in adults and result of defective atrial contractions may cause atrial thrombi formation. Left-sided cardiac thrombi are often associated with myocardial infarction, dilated cardiomyopathy or mitral valve disease. On the other hand, right-sided cardiac thrombi may consist of secondary causes, less often seen and a few case reports of right atrial (RA) thrombus have been described in the literatüre(1,2).

A 72 year-old woman with permanent AF history was admitted to our clinic because of worsening complaint of dyspnea. TEE revealed spontaneous echo contrast (SEC) in both atria with the presence of thrombus 1.5x4.0 cm in size from right atrial appendage (RAA). No thrombus detected during screening of left atrium (LA) and left atrial appandage (LAA). In this case report; we aimed to emphasise that transesophageal echocardiography (TEE) examination of the RAA should be done carefully before deciding the treatment modality in nonvalvular AF as well as LAA.

Keywords: *Atrial fibrillation, Right atrium; Thrombus*

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CASE REPORT

A 72 year-old woman with a known history of AF was admitted to our clinic because of worsening complaint of dyspnea. The patient was suffering from dyspnea for a long time but gradually worsened in last two weeks. She had no history of coronary artery disease, hypertension or diabetes mellitus. Her jugular veins were distended and remarkable bilateral pretibial edema was present. Auscultation revealed a mild apical systolic murmur, basal-mid pulmonary rales and tachycardia with an irregular heart rate. The 12-lead electrocardiogram revealed AF with a rate of 115/minute. A chest radiography showed cardiomegaly and pulmonary congestion. Transthoracic echocardiography showed depressed left ventricular function with an ejection fraction of 40% and biatrial dilatation with a mass fixed to the right atrial free wall (Figure 1). She was internalized to cardiology service with the presumptive differential diagnoses of malignancy,thrombus or a mass of unknown origin accompanied with congestive heart failure.

In service; the patient was initially treated with asetilsalisilic acid, metoprolol, spironolactone and digoxin. After that a TEE examination was planned. In TEE examination; no thrombus formation was detected during screening of LA and LAA. Interestingly; during screening of RA, SEC with the presence of thrombus approximately 1.5x4.0 cm in size originated from RAA was seen at RA (Figure 2).Tumor markers and thyroid function tests were within normal limits. Venous doppler ultrasonography (USG) and dynamic thorax computed tomography (CT) were performed with the suspicion of deep venous thrombosis and pulmonary embolism. Deep venous thrombosis was not detected and dynamic thorax CT was also normal.

Due to right upper quadrant pain and past history of a hydatid cyst in her liver initially an abdominal USG performed then non-contrast CT and dynamic magnetic resonance imaging (MRI) revealed hydatid cyst (approximately 9x6 cm in size, hypoechoic, heterogeneous, with foci of calcifications) in the liver. It was evaluated as type V hydatid cyst not requiring surgical intervention.

Warfarin treatment was decided to be administered to the patient. The targetted internalization normalization ratio (INR) levels were met and she was discharged with warfarin treatment. After four weeks treatment with warfarin; a control TTE was performed and no thrombus formation was seen. Cardioversion was also not planned.

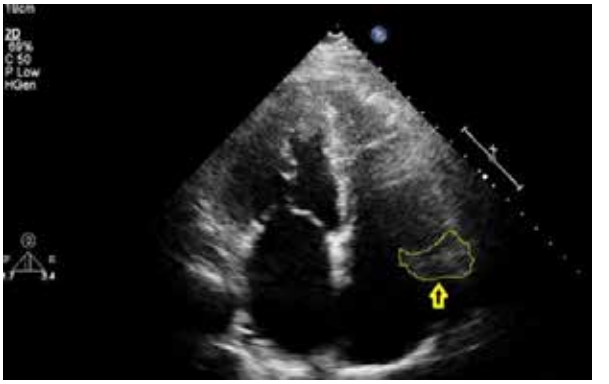

Figure 1: TTE demonstrating a mass fixed to the right atrial free wall resembling like a thrombus.

Figure 2: TEE revealed right atrial SEC with the presence of thrombus approximately 1.5x4.0 cm in size originated from right atrial appendage.

DISCUSSION

In this case we report an isolated RAA thrombus in a patient with nonvalvular AF. Both atria are fibrillating in AF but great majority of thrombi are detected within the LAA. In AF, the incidence of thrombus in RAA is less frequently than LAA (0.4% and 7.5%, respectively) (3,4).

Hence, various theories has been proposed about why thrombus in RAA is less prevalent. One of the proposal is from the study of Subramanian et al. They showed that the larger RAA diameter and deficiency of anatomic remodeling in right atrium (RA) may be the reason of lower prevalence of RAA thrombus than of LAA found among patients with AF(5). One other proposal says that the increased risk of thrombus formation in the left but not in the right atrium is because of increased left atrial platelet reactivity when compared to RA (6). Moreover, in the study of De Divitiis et al., it was demonstrated that patients with nonvalvular AF had larger RA area, lower RA ejection fraction, peak emptying velocities and tricuspid annular excursion (3). Additionally, RAA thrombus is more common in nonvalvular AF than in valvular AF because AF could affect both atria in nonvalvular AF, in contrast with valvular AF (7). Therefore evaluation of RAA functions is as important as LAA functions in patients with nonvalvular AF.

Although relatively rare when compared to the left side, RAA thrombus should also be screened during TEE examination provided cardioversion is planned. In our case we have confronted an unusual localization of thrombus with a careful TEE screening of RA. If we had not done the visualization of RAA then the consequence might be a pulmonary embolism which would worsen the complaint of dyspnea in our patient. However, we must stress that visualization of RAA is more difficult than LAA on TEE examination. At the same time, most of the trombi in RA are located within RAA in AF (7,9).

In our patient there was biatrial dilatation as well as SEC on both atria. We do know that a thrombus in RAA always accompanies with SEC in the same atrium estabilishing the only independent predictor of RAA thrombosis (3). Sahin et al. found that RAA function impairs in all patients with permanent AF and and development of right atrial SEC were observed in all different etiologies of nonvalvular AF. Then this study results recommended that evaluation of RAA functions may have a rising value for determining the risk of thromboembolism in patients with permanent AF (10). In connection with these knowledges, SEC in RA was an important clue for RAA thrombus as in our case.

Pesavento et al. showed that some specific heart diseases like AF could be a possible source of pulmonary emboli in patients with a diagnosis of pulmonary embolism nonassociated with deep vein thrombosis (11) and Oqren et al. showed in his study of 23796 consecutive autopsies that right atrial thrombosis should be considered in all cases of pulmonary embolism, especially in patients with AF in the absence of confirmed deep vein thrombosis because RA thrombosis is as common as left cardiac thrombosis (12). Deep venous doppler USG and throrax CT revealed normal findings in our patient. We performed these tests in order to exclude deeep vein thrombosis which is one of the main reason of right atrial thrombus and pulmonary embolism. With these imaging results, we reached the decision that this RAA thrombus takes its source from nonvalvular AF.

In our case there is an interesting point is the concomitantly found hydatid cyst in liver. Cardiac hydatidosis accounts for 0.5% to 2% of human echinococcous presentations (13). It was reported that right-sided cardiac hydatid cysts could cause fatal pulmonary embolism (13). Whether the mass in RA of our patient is a hydatid cyst or not was a dilemma should be answered. We do know that a right intraatrial mass can be diagnosed as a thrombus if it associated with atrial fibrillation, dilated atrium, low ejection fraction or SEC. Also thrombi formed due to atrial fibrillation are usually located in the appendage whereas hydatid cysts are usually located in free wall (14). Also, in our case, intraatrial mass was located in free wall of RA. Because of that, when the differential diagnosis is difficult and the possibility of thrombus is higher, a treatment with anticoagulation may be a good option with echocardiographic follow-up.

Conclusion can be drawn from this case is that RAA thrombus in nonvalvular AF may occur without a

thrombus in LAA so RA should also be remembered when the assessing LA in AF. Hence, we strongly aimed to emphasise that TEE examination of the RAA should be done carefully before deciding the treatment modality in AF.

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