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Twice Recurrence Right Atrial Thrombus Following Atrial Septal Defect Repair

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ABSTRACT

Thrombus formation in the right atrium after atrial septal defect repair is a rare condition. In this article, a case of right atrial thrombus recurring twice after ASD operation in a 52-year-old female patient is presented.

Keywords: Atrium, Thrombus, Recurrence

1. INTRODUCTION

Atrial septal defect (ASD) is the most common congenital heart disease in adults. ASD can be repaired invasively or surgically. Intraatrial thrombus and thromboembolic events are rare after ASD surgery. Left atrial thrombus is more common than right atrial thrombus, but right atrial thrombus can cause serious complications such as paradoxical systemic embolism and pulmonary embolism (PE). In this article, We presented a case who was operated twice for right atrial thrombus after ASD surgical repair.

Case Presentation:

A 52-year-old female patient was admitted to our outpatient clinic with complaints of atypical chest pain lasting for 2 months. The patient was operated for secundum type ASD 5 years ago and the defect was closed with a pericardial patch. A right atrial thrombus was detected in the follow-up examination 2 years after the first operation. The right atrial thrombus was removed with a second surgical operation. No medication was recommended after the operation. No pathological finding was observed in the follow-up examination of the patient. The patient was admitted to our clinic because of chest pain and shortness of breath that had increased for 2 months. The patient's coagulation tests were unremarkable and were in sinus rhythm. Transthoracic echocardiography revealed a mobile mass in the right atrium (LA) with a diameter of 20 X 26 mm, attached to the interatrial septum with a thin stem (Figure 1).

Thrombophilia panel was normal in the patient who had no signs of deep vein thrombosis in the lower extremities.

Due to the mobility of the mass and the risk of thromboembolism, the patient was decided to have a surgical operation. Aortic cannula was inserted through the right femoral artery. Bicaval venous cannulation was performed in the inferior vena cava and superior vena cava, and the vena cava was rotated with tape. Cardiopulmonary bypass was established. The right atrium was opened in the beating heart without cardioplegia, A mass of 20-30 mm in diameter was detected in the right atrium adjacent to the tricuspid anterior leaflet and removed (Figure 2). The patient was discharged with an uneventful postoperative course. The patient was started on rivaroxaban as an anticoagulant. Pathology result was reported as organized thrombus. No recurrent atrial thrombus was observed in the patient's follow-ups.

2. DISCUSSION

Cases related to thrombus in the right atrium were first published in the 1980s, and these cases are related to patients with pulmonary embolism (1) Today, right atrial thrombi are recognized more frequently and earlier as a result of the increasing use of echocardiography. (2,3). Right atrial thrombus can occur locally or through embolization caused by deep vein thrombosis.

After atrial septal defect surgery; arrhythmia, pericardial effusion and thrombus formation can be seen. There are many studies reporting left atrial thrombus formation after percutaneous, primary or patch closure of ASD (4,5). There are anatomical formations in the right atrium, such as the tricuspid valve, eustachian valve, patent foramen ovale, and interatrial septum, which form the basis for the attachment of the thrombus to the right atrium (6). In 3-23% of patients with pulmonary embolism, a mobile thrombus is

detected in the right atrium. This situation causes pulmonary embolism to progress even more fatal (7,8). Treatment options include thrombolytic therapy, surgical embolectomy, and follow-up with anticoagulation, but there is no clear consensus on determining the most appropriate treatment strategy. However, any delay in the treatment of these patients can be fatal.

In our case, there was thrombus formation that recurred twice after ASD repair. Recurrence of thrombus formation twice is a rare condition. Following the removal of the thrombus, anticoagulant treatment was started in our patient and no recurrence was observed in the 1-year follow-up.

In conclusion, intra-atrial thrombus may occur due to endothelial damage after ASD closure. But it's rare for it to happen twice. If atrial thrombus formation is not treated quickly and aggressively, it can cause life-threatening complications. For this reason, we recommend long-term antiplatelet and anticoagulation therapy after surgery to prevent recurrence in patients with postoperative right atrium thrombus.

When thrombolytic agents are used in the treatment of intra-atrial thrombus, pulmonary embolism may occur due to fragments detached from the thrombus. Surgical thrombectomy is an effective treatment with low risk and complete cure. In our case, there was no PE and surgical treatment was considered appropriate instead of thrombolytic treatment due to the risk of systemic thromboembolism.

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Figure: Echocardiographic view of right atrial thrombus



Figure 2: Surgically removed right atrial thrombus