Cardiology in the Young

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In-Stent Late Thrombus in a Patient with Aortic Coarctation

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Abstract

A 27-year-old man applied for routine control due to aortic coarctation stent. During routine control, a late in-stent thrombus was detected. The patient was asymptomatic. Thrombus resolution was achieved with anticoagulant therapy. Anticoagulant therapy is one of the options in the treatment of aortic stent graft-associated asymptomatic thrombus. Surgical intervention might be required in case of thromboembolism, haemodynamic deterioration, and intra-aortic gradient with high blood pressure in the upper extremity.

Brief Report

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The institution at which the case was detected: Department of Cardiology, Near East University Hospital.

Case report

A 27-year-old man applied for routine control due to aortic coarctation stent. He had no symptoms, and his blood pressure was normal from all four extremities. A successful percutaneous balloon angioplasty was performed due to aortic coarctation when he was 11 years old, and stent implantation was performed because of restenosis 9 years after balloon angioplasty.

A slight increase in left ventricular wall thickness was revealed by transthoracic echocardiography. In addition, no gradient was detected in the left ventricular outflow tract and thoracic aorta. However, a thrombus was detected in the aortic stent located after the subclavian artery in the suprasternal window by echocardiography (Fig 1).

CT angiography revealed the in-stent thrombus formation but severe obstruction was not seen(Fig 2). Cranial MRI revealed there was no cerebral embolism. Outpatient follow-up was planned. Anticoagulation was started with warfarin and enoxaparin. Enoxaparin was prescribed at a dose of 100 IU/kg every 12 hours. Enoxaparin was withdrawn when international normalised ratio was above 2. The target international normalised ratio value was set to between 2 and 3. There were no thromboembolic complications in the ongoing controls. At the end of 3 weeks, the size of the thrombus gradually decreased and finally disappeared (Supplementary video S1). Warfarin treatment was withdrawn 3 months later. After that antiplatelet therapy was continued with acetylsalicylic acid. There was no recurrence of thrombus or any other complication during 1-year control.

Discussion

The late thrombosis of the aortic stent is an uncommon situation. However, there are a few examples of endovascular aortic repair [1] and thoracic endovascular aortic repair-[2] associated thrombus in the literature. Our case is the first as it is an in-stent late thrombus implanted in the thoracic aortic coarctation.

It has been determined that multifactorial causes such as coagulation disorders, hormone replacement therapy, stent malapposition, connective tissue disorders, and tobacco use are responsible for the aetiopathogenesis of in-stent thrombus.[3] The underlying cause of our case may be stent malapposition secondary to the small stent diameter chosen due to being a young patient. Because in this patient group, sometimes a smaller stent may be chosen to provide better size compliance.[4]

Anticoagulant therapy is one of the options in the treatment of aortic stent graft-associated asymptomatic thrombus.[5] Surgical intervention may be required if thrombus causes thromboembolism or if haemodynamic deterioration[2] occurs or if it causes intra-aortic gradient with high blood pressure in the upper extremity.

Conclusion

To prevent poor cardiovascular outcomes, aortic coarctation patients treated with stent should continue annual control even if they are asymptomatic.

Supplementary material. To view supplementary material for this article, please visit https://doi.org/10.1017/S1047951122000713

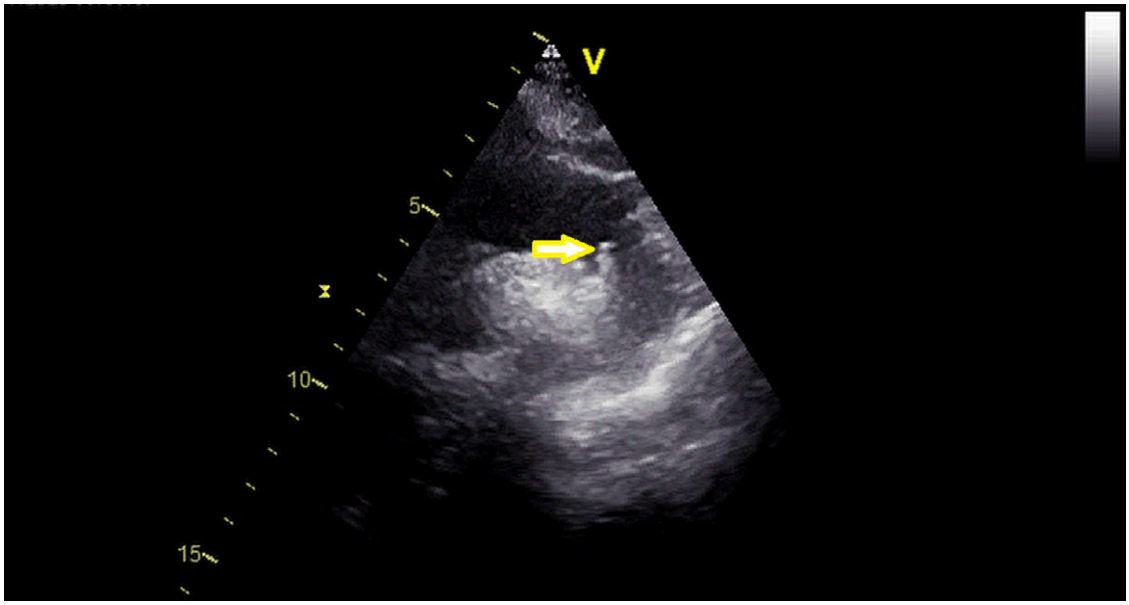

Figure 1. Thrombus in the aortic stent (on the echocardiography).

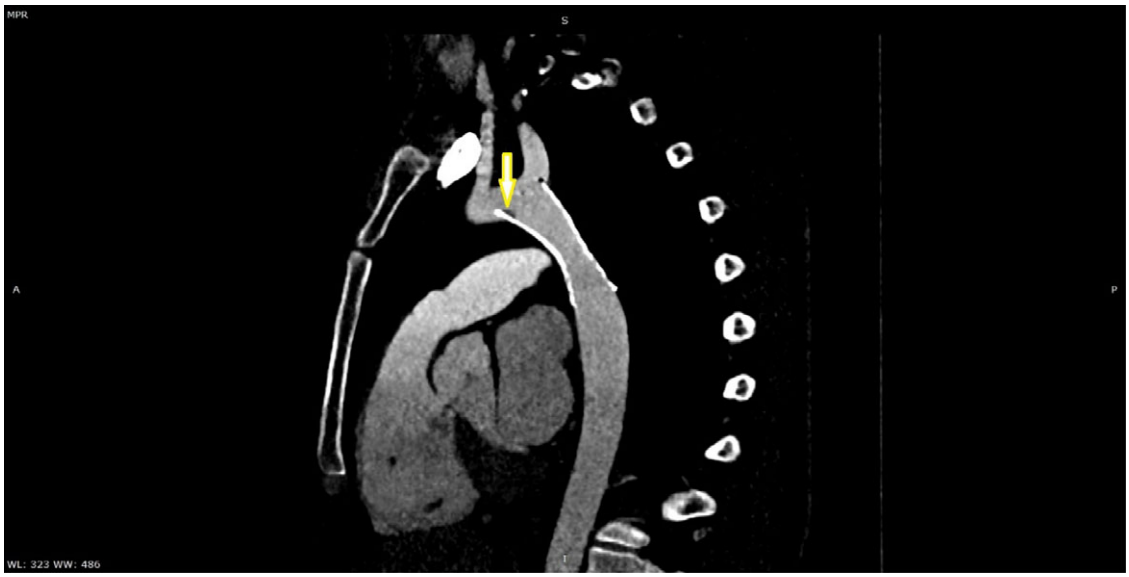

Figure 2. Thrombus in the aortic stent (on the CT).

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Conflicts of interest. None.

Ethical standards. This article was not produced as a result of any human or animal experimentation.

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