Case Report
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Successful decision-making for therapy of the patient with a floating thrombus attached to ruptured atherosclerotic plaque in the ascending aorta

Tomasz Stankowski, MD[1]
Dr. med. Vusal Hajiyev, MD[1]
Dr. med. Alexander Bauer, MD[1]
Dr. med. Oliver Grimmig, MD[1]
Prof. Dr. med. Dirk Fritzsche, MD[1]

[1] Sana Heart Center Cottbus, Cottbus, Germany

Correspondence:
Dr. med. Vusal Hajiyev, MD
Sana Heart Center Cottbus
Cottbus, Germany.
Phone: +49 355 4800
Email: vusal.hajiyev@sana.de

Peripheral artery thromboembolism caused by free-floating thrombus attached to ruptured atherosclerotic plaque in the ascending aorta occurs extremely rare and can lead to serious complications. There are different therapeutic strategies but still no consensus. We present a 59-year-old patient where we decided for emergent operation.

Keywords: thromboembolism, floating thrombus, ascending aorta, atherosclerotic plaque.

Introduction

Intracardiac thrombus formation caused by cardiac arrhythmia or prosthetic valve endocarditis are a common reasons of peripheral arterial thromboembolism. A thrombosed rupture of the ascending aorta with peripheral thromboembolic complications is a very rare case in cardiac surgery.

Case Report

A 59-year-old male was admitted to the emergency department due to a stabbing epigastric pain and vomiting. Computed tomography (CT) of the chest showed unidentified mass attached to the aortic plaque in ascending aorta, embolic infarctions of caudal left renal and two peripheral splenic segments. Transesophageal echocardiography (TEE) revealed proper morphology and function of the valves with normal left and right ventricular functions, excluded any intracardiac thrombi and confirmed the presence of a floating mass attached to the plaque in the ascending aorta, above the aortic valve (Fig. 1, 2). The patient underwent an emergency cardiac surgery. The operation was done through median sternotomy using cardiopulmonary bypass and blood cardioplegia for induction of cardiac arrest. After transverse aortotomy, 3.0 × 3.0 cm solitary, ruptured to the tunica adventita arteriosclerotic plaque located on the greater curvature of the ascending aorta, above the sinotubular junction was found. On the plaque was found 3.0 × 4.0 cm floating thrombus (Fig. 3). Subtotal resection of the plaque with an attached thrombus was performed and the aortotomy was closed using 4/0 polypropylene. Intraoperative TEE revealed good cardiac function, no evidence of aortic thrombus or dissection. Histopathological examination of the resected mass confirmed the above mentioned diagnosis of a thrombus. The postoperative recovery was uneventful and the patient was discharged after 8 days. Oral anticoagulation by means of vitamin K antagonists was given on second post-op day and the anticoagulation treatment was continued until the third postoperative month.

Discussion

Due to the relative rarity of this disease, we did not find the clear recommendations for this kind of unusual case. Conservative treatment could be associated with embolization, aortic rupture of the ulcerated atherosclerotic plaque, intramural hematoma

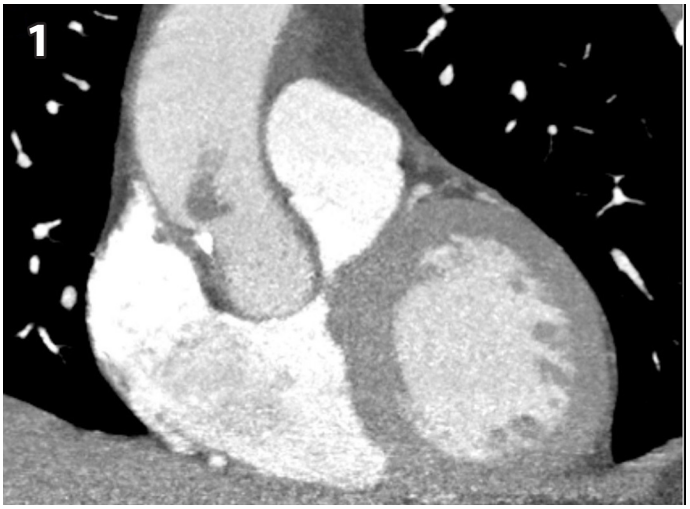

Figure 1.
Unidentified mass in the ascending aorta above the right sinus of Valsalva. Preoperative CT of the chest.

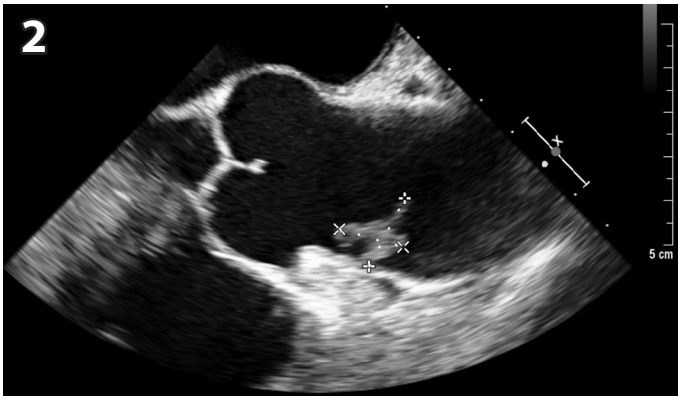

Figure 2.
Unidentified mass in the ascending aorta above the right sinus of Valsalva. Preoperative transesophageal echocardiography.

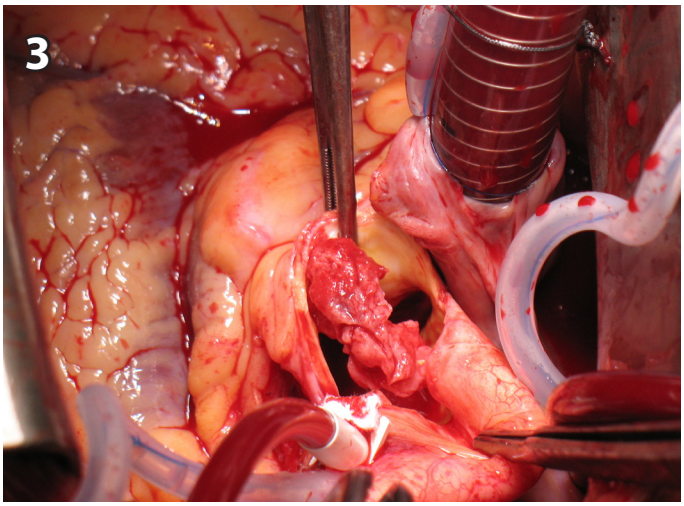

Figure 3.
Intraoperative photograph. Thrombus attached to the atherosclerotic plaque, 2 cm above the right coronary ostium.

or even aortic dissection [1], therefore we recommend a immediately thrombectomy. The majority of fund studies described the urgent thrombectomy as the only sensible solution in these group of patients [1,2,3]. On the other hand, some authors performed the surgical intervention after primarily heparin treatment with satisfactory results, however it was also signalized, that the delay of the surgery might cause fragmentation of the thrombus [3]. There is little evidence to suggest complete dissolution of the mobile thrombus after intravenous heparin, however more than half of patients required still thrombectomy [4]. Successful thrombolysis of structure in the aortic-arch was observed in one paper [5], the author suggested that this kind of treatment might be a promising therapy in selected patients, however further studies are needed, therefore the effectiveness should be evaluated with caution.

Conclusion

In our opinion, thrombus in the ascending aorta attached to the atherosclerotic plaque should be operated as emergency to avoid further fragmentation of the structure and consequences such as thromboembolization, plaque rupture or aorta dissection.

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