Trouble Times Two: Mechanical Aortic Valve Thrombosis Combined with Anti-Phospholipid Syndrome

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BACKGROUND

Anti-phospholipid syndrome (APLS) and mechanical aortic valve replacement (mAVR) are both absolute indications for warfarin. Non-compliance with warfarin is catastrophic for both conditions.

METHODS

A 46-year-old male with APLS, past pulmonary embolism, and mechanical AVR (23mm On-X valve 3 years earlier for aortic regurgitation) presented with substernal chest pain and dyspnea for 3 days. A history of warfarin non-adherence secondary to psychosocial factors was present. On examination, he was hemodynamically stable and found to have a grade II/VI systolic ejection murmur in the aortic area and soft A2.

DECISION MAKING

Admission INR was supratherapeutic at 4.2 (due to excessive intake of warfarin by the patient after symptom onset). CTA in ER showed no PE, but a large filling defect on mAVR suggesting a thrombus (Figure 3). TTE revealed LVEF 40-50% and a large mobile mass on mAVR extending to the LV outflow tract. Urgent fluoroscopy revealed an immobile medial disc of mAVR (Figure 2A and Figure 2B). A transesophageal echocardiogram confirmed a 2.0x 2.3 cm thrombus on mAVR (Figure 1A) and critical aortic stenosis (peak gradient 96mm Hg, mean gradient 56mm Hg) (Figure 1B).

At this point, thrombolysis was deferred because of the large size of the thrombus and surgery was recommended. Surgery was delayed for 2 days due to persistently high INR while warfarin was held, and IV heparin started. The patient underwent a tissue aortic valve implantation (23mm Edwards Inspiris valve). The histology of mass showed thrombus only. He recovered well and was discharged on warfarin for APLS.

Mechanical Aortic Valve thrombosis resulted in a patient with Antiphospholipid syndrome and Warfarin non-adherence

Initial diagnosis of valve thrombosis was made in a CTA done in the ER for pulmonary embolism

Aortic Doppler profile revealed critical aortic stenosis while patient was not in severe hemodynamic instability

Successful redo aortic valve surgery using 23mm Edwards Inspiris tissue valve was done

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CONCLUSION

Mechanical aortic valve thrombosis in a patient with APLS is described. The patient underwent successful redo sternotomy and redo aortic valve implantation using a 23mm bovine pericardial valve (Edwards Inspiris) and resection of a previously undiagnosed subaortic membrane.

FIGURE 1

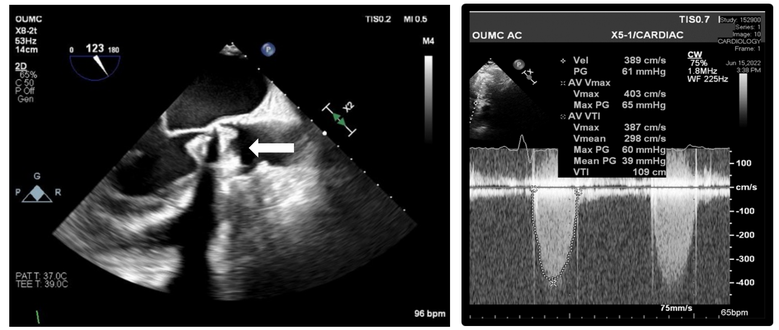

Figure 1A shows the thrombus (arrow) on left ventricular inflow-outflow view on TEE
Figure 1B shows an increased Aortic Gradient across the mechanical valve on TEE

FIGURE 2

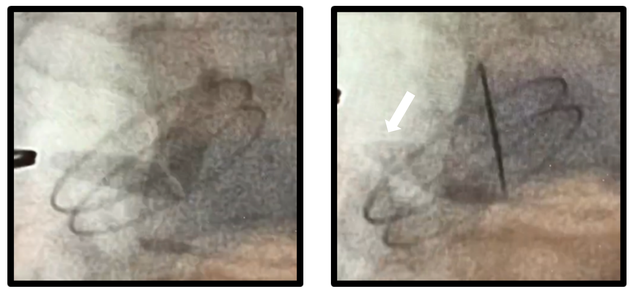

Figure 2A shows fluoroscopy image of mechanical valve in closed position
Figure 2B shows fluoroscopy image of mechanical valve in open position with an immobile disc (arrow)

FIGURE 3

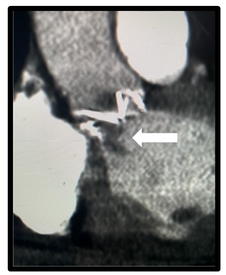

Figure 3 shows thrombus (arrow) on the 23mm On-X valve on Computed Tomography Angiography

FIGURE 4

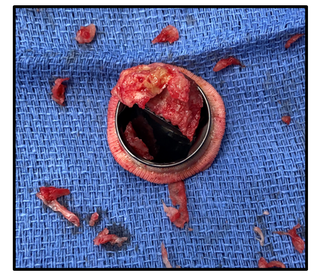

Figure 4 shows the explanted 23mm On-X valve with attached thrombus

DISCLOSURE INFORMATION

The authors have no industry relationships to disclose.