

## Percutaneous aspiration of a right atrial thrombus with the AngioVac system

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The AngioVac (AngioDynamics, USA) is a percutaneous aspiration system designed for removal of pathologic intracardiac structures with the use of large-bore catheter connected to extracorporeal circuit (ECC) filtering and returning blood.

A 46-year-old male was hospitalized due to myocardial infarction with ST segment elevation. This was complicated by mitral and aortic valve insufficiencies and refractory cardiogenic shock requiring urgent replacement of both valves in two separate surgical interventions and prolonged use of veno-arterial-extracorporeal-membrane-oxygenation. Follow-up echocardiography revealed a mobile structure in the right atrium (RA) of 4.5 × 1.5 cm resistant to anticoagulation (Fig. 1). A multi-specialty team agreed to utilize a percutaneous approach as surgical removal was deemed as too high-risk. The procedure was performed under fluoro- and transesophageal echocardiography (TEE) guidance and general anesthesia. The 22 French (Fr) AngioVac 180° angled cannula was introduced to the RA through a 26 Fr left femoral vein (FV) sheath, and connected to ECC to aspirate the clot and to return the blood through an 18 Fr reinfusion sheath to

the right FV. FVs were chosen as jugular veins were occupied and the thrombus location near fossa ovalis made femoral access more suitable. Initiation of the ECC resulted in a rapid thrombus removal seen in TEE and safe procedure completion. The patient was extubated on the same day and started rehabilitation.

It was shown herein, that removal of an intracardiac structure with the use of AngioVac system was feasible and safe. This minimally invasive procedure may be an option for patients who are not candidates for an open heart surgery.

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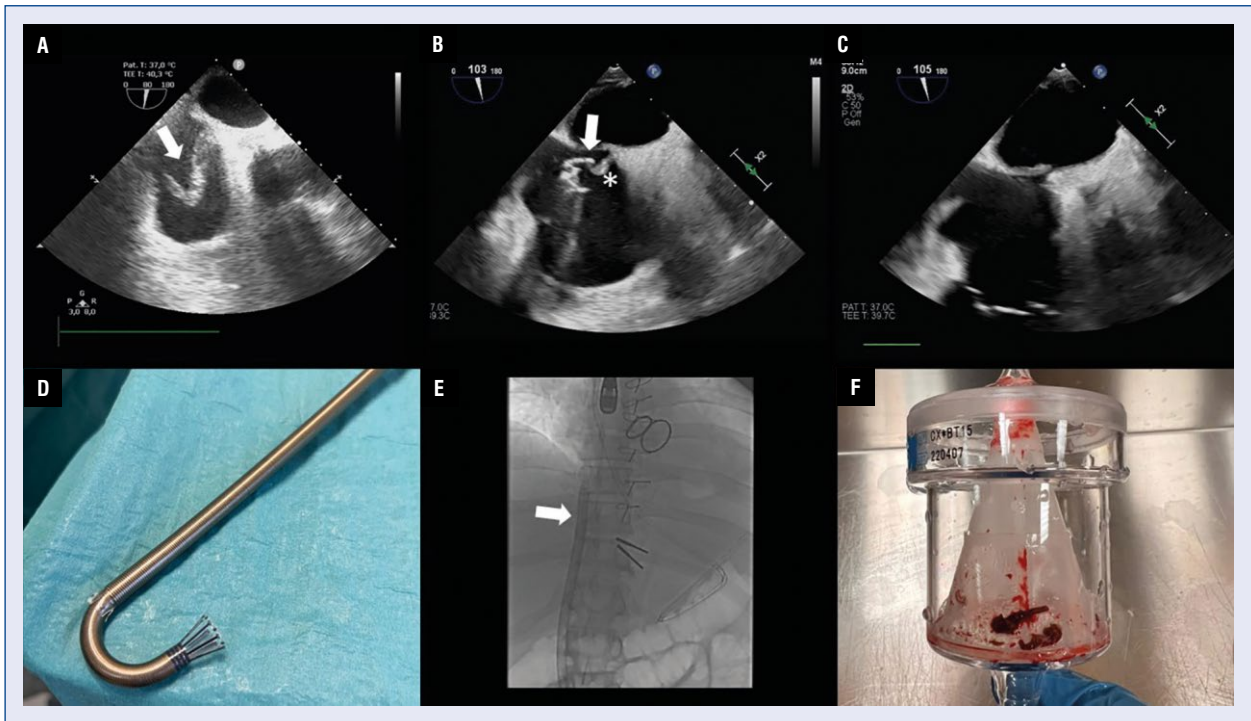
**Conflict of interest:** None declared

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**Figure 1.** **A.** A transesophageal echocardiography (TEE) showing a mobile structure (arrow) in the right atrium (RA) of 4.5 × 1.5 cm in size posing a risk for pulmonary artery embolization; **B.** An expandable funnel-shaped distal tip of the AngioVac Cannula (arrow) aspirating the RA structure (\*) with the suction forces generated by the extracorporeal circulation; **C.** The TEE showing the free from mobile structure RA; **D.** The 22 French (Fr) AngioVac 180° angled Cannula with an expandable funnel-shaped distal tip; **E.** Fluoroscopy showing the introduction of the AngioVac Cannula (arrow) to the RA structure through a 26 Fr left femoral vein sheath and a stiff wire; **F.** An extracorporeal circulation filter showing removed thrombus.