Late device thrombosis after atrial septal defect closure

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A 62-year-old woman with a history of transcatheter atrial septal defect (ASD) closure using a Cardioseal/Starflex® device was admitted for recurrent transient ischaemic attacks 3 years after closure. A transoesophageal echocardiogram (TEE) revealed a large, mobile, thrombus-like structure attached to the left-atrial side of the device as a potential cardio-embolic source. There was no evidence of device malposition or arm fractures. Four months after initiation of oral anticoagulants, a TEE showed no resolution of the thrombus-like structure. The patient refused the recommended surgical exploration. Unfortunately, she was re-admitted for recurrent stroke 2 months later. Finally, she approved surgery through minimal invasive port access surgery. During surgery, a structure of 2 cm covering the device was removed. The device was explanted, followed by primary ASD closure. Microscopic examination confirmed the structure to be a fresh fibrin thrombus with granulocytes. The patient recovered well. Treatment with oral anticoagulants was continued for at least 6 months.

Device thrombi have been described early after ASD closure. We report a symptomatic device thrombus at long-term follow-up using a Cardioseal/Starflex® device. These thrombi usually resolve under anticoagulation therapy. If they persist, surgery is recommended.

Panel A. TEE image of the thrombus attached to the left-atrial side of the device. AoV, aortic valve; LA, left atrium.
Panel B. Three-dimensional TEE image of the thrombus attached to the left-atrial side of the device.
Panel C. Intra-operative view of the thrombus attached to the left atrial septum. MV, mitral valve.
Panel D. Microscopic image of the thrombus containing fibrin, erythrocytes and granulocytes (Haematoxylin–eosin stain).

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