Eustachian valve interfering with transcatheter closure of patent foramen ovale

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A prominent Eustachian valve (EV) is a common finding in patients with a patent foramen ovale (PFO). Its presence might compromise transcatheter closure of the PFO.

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Intrasept;
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Three selected patients who suffered from a recent cryptogenic stroke were referred for percutaneous PFO closure. In all, closure was attempted with the Intrasept device (Cardia, Burnsville, US). Left and right umbrella were deployed in the left and right atrium, respectively. However, in all these patients, one of the six arms of the right umbrella hooked on a prominent EV (Figure 1A and B). Manipulation using the guiding sheath resulted in correct positioning of the device in two patients (Figure 2). In one patient the device needed to be retrieved, which was performed very easily, finishing the procedure by using a disk device.

The EV is an embryonic remnant and directs the blood from the inferior vena cava to the interatrial septum.

Figure 1  (A) Transoesophageal image of the Intrasept device with one right arm hooked on the Eustachian valve (white arrow). AO, aorta; EV, Eustachian valve; LA, left atrium; RA, right atrium. (B) Fluoroscopic image of the Intrasept device with one right arm hooked on the Eustachian valve (white arrow).

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When the PFO remains open, it increases the probability of a paradoxical embolism. Therefore, percutaneous closure is suggested in patients with cryptogenic stroke, especially in those with a high risk PFO anatomy (spontaneous right-to-left shunt, atrial septal aneurysm, tunnel-like PFO).

To conclude, in these particular cases one arm of the right umbrella hooked on the EV. Persistent malpositioning of the device could result in future problems related to a remaining right-to-left shunt. Therefore it is very important to make sure that the device is in the correct position, especially in patients with a prominent EV.

References