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Percutaneous closure of "hidden" left atrial appendage with Ultraseal device

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A 79-year-old woman with permanent atrial fibrillation under oral anticoagulation was admitted due to recurrent anemia secondary to gastrointestinal bleeding. She underwent cardiac surgery 40 years prior, where atrial septal defect was closure and a persistent left-superior vena cava corrected. In 2011, a new open-heart surgery was performed, resulting in a bioprosthetic mitral valve, a tricuspid annuloplasty and a left atrial appendage (LAA) ligation.

Transesophageal echocardiography (TEE) showed an incomplete LAA closure with an ostium of 12 mm (Fig. 1A, B). After discussion, the heart team decided a percutaneous closure of LAA for interruption of oral anticoagulation.

During the procedure, it was very difficult to locate the LAA ostium despite intracardiac echocardiography guidance and left atrium angiograms in different projections (Fig. 1C). Finally, using TEE guidance and selective injections with an AL1 catheter, the small entrance of the "hidden" LAA was found (Fig. 1D). LAA occlusion was performed with an Ultraseal device (Cardia Inc., Eagan, Minnesota, USA) (Fig. 1E) achieving a complete LAA sealing (Fig. 1F–I).

The patient had an uneventful recovery and remained asymptomatic after 1-year follow-up.

Incomplete LAA closure following surgical ligation occurs in 30–40% of cases and it is associated with an increased risk of thrombus formation/ /thromboembolism.

The Ultraseal device is composed by a distal soft bulb that anchors the device into the LAA and a proximal sail that seals the LAA. An articulating joint allows a high range of movement and conformability, making it potentially ideal for complex cases with variable anatomies.

Conflict of interest: None declared

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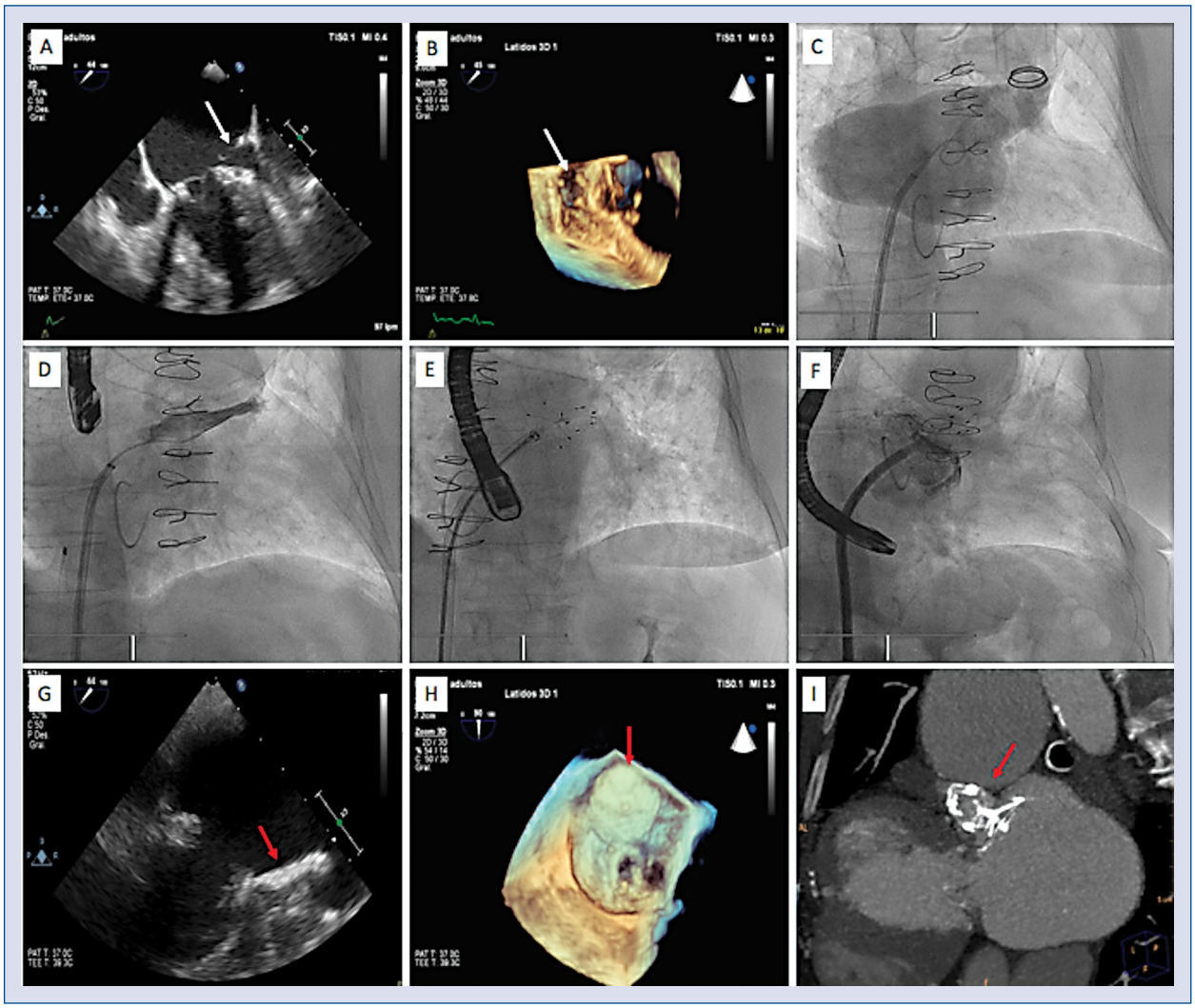

Figure 1. A. Two-dimensional transesophageal echocardiography (2D TEE) view showing the incomplete left atrial appendage (LAA) closure (white arrow); **B.** Three-dimensional transesophageal echocardiography (3D TEE) image showing the ostium of the incomplete LAA closure (white arrow); **C.** Fluoroscopic image: left atrium angiogram using a pigtail catheter; **D.** Fluoroscopic image: selective injection with AL1 catheter finding LAA location; **E.** Fluoroscopic image: Ultraseal device deployment; **F.** Fluoroscopic image: final result with complete sealing of LAA; **G.** 2D TEE view: LAA closure with Ultraseal device (red arrow); **H.** 3D TEE image: Ultraseal device proximal sail view covering the LAA (red arrow); **I.** Computed tomography scan image: Ultraseal device position sealing the LAA (red arrow).