

Images in  
Cardiovascular Medicine



# Percutaneous Left Atrial Appendage Closure in the Presence of Thrombus Using LAmBRE Device and Cerebral Protection System

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OPEN ACCESS

**Received:** Sep 20, 2019

**Accepted:** Oct 23, 2019

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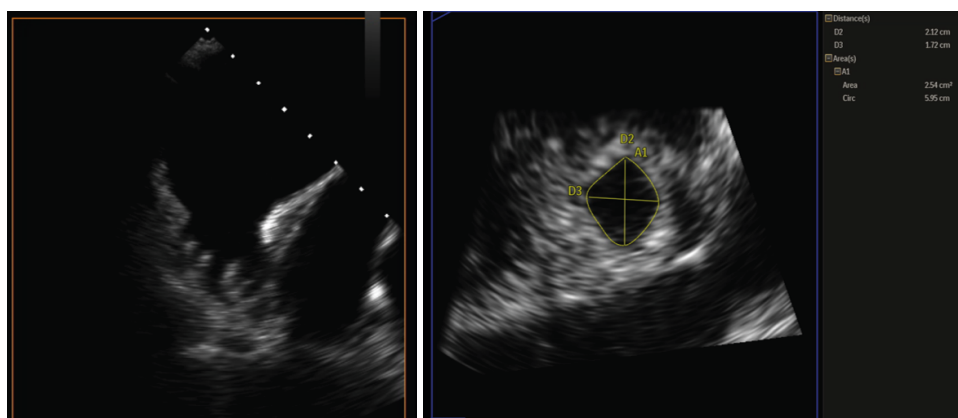
**Conflict of Interest**

The authors have no financial conflicts of interest.

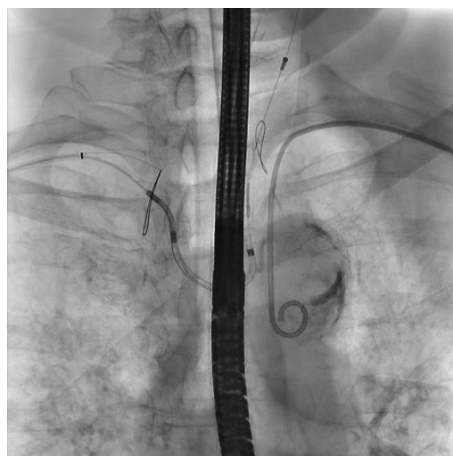
**Author Contributions**

Conceptualization: Mohandes M, Pernigotti A; Data curation: Morr CI; Writing - original draft: Mohandes M; Writing - review & editing: Bardají A.

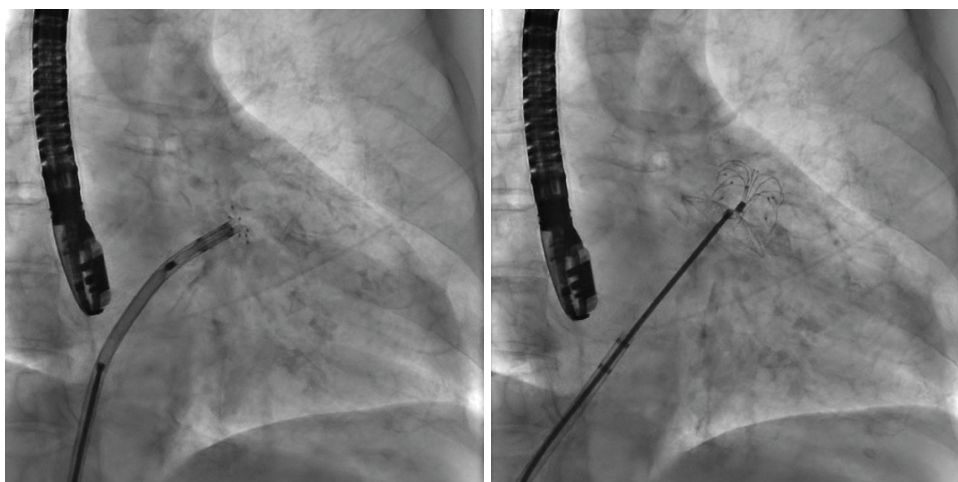
A 79-year-old woman in permanent atrial fibrillation with CHA<sub>2</sub>DS<sub>2</sub>-VASc score 6 and under acenocumarol therapy was referred to our department for percutaneous left atrial appendage (LAA) closure after suffering a hemorrhagic cerebrovascular accident. Transesophageal echocardiography (TEE) revealed a thrombus in LAA (**Figure 1**). We planned to implant LAmBRE™ (Lifetech Scientific Corp., Shenzhen, China) with simultaneous use of a cerebral protection device, Sentinel™ (Claret Medical, Santa Rosa, CA, USA) (**Figure 2**). The procedure was guided by TEE without any contrast injection. A partial umbrella delivery of a LAmBRE 24/30 mm was done in front of LAA ostium and the whole system was advanced up to the point immediately before thrombus in LAA superior lobe. At this point, the umbrella delivery was completed and afterward the cover part was immediately unsheathed (**Figure 3**). TEE revealed a proper position of LAmBRE, so the device was eventually released (**Figure 4**). Sentinel™ did not contain any debris. The patient's postoperative course was uneventful.



**Figure 1.** TEE at 135° shows a multilobed LAA with small thrombus in superior lobe (left). LAA ostium with maximum diameter of 21 mm (right).  
TEE = transesophageal echocardiography; LAA = left atrial appendage.



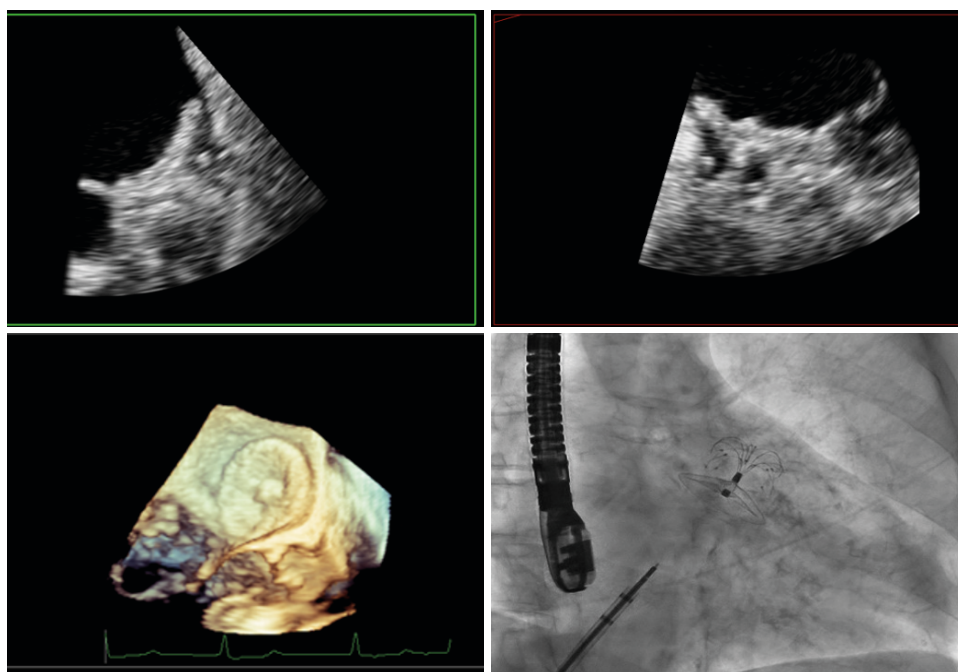
**Figure 2.** Sentinel was introduced by right radial approach with its 2 baskets placed in right brachiocephalic trunk and left common carotid artery, respectively.



**Figure 3.** Partial delivery of umbrella component (left). Concave shape of the LAMBE's cover at the LAA entrance (right).  
LAA = left atrial appendage.

The presence of thrombus in LAA has been considered a contraindication to percutaneous LAA closure since the manipulation of catheter and device may lead to systemic embolisation. We used partial deployment technique of umbrella at the orifice of LAA as described in some reported cases.<sup>1)</sup> Thereafter, the system was advanced up to the landing zone where the device was completely delivered trying not to touch the thrombus.

In selected patients LAA closure in the presence of thrombus is safe and feasible and should not be considered an absolute contraindication.<sup>2)</sup>



**Figure 4.** TEE shows proper placement of LAmbre 24/30 mm with its disk covering the LAA entrance (superior right and left). There is no significant leak at the upper edge (superior left). Three-dimensional TEE depicts the LAmbre' cover (inferior left) at the entrance of LAA. Fluoroscopy image of LAmbre's release after confirmation of proper positioning and device stability (inferior right).  
TEE = transesophageal echocardiography; LAA = left atrial appendage.

## REFERENCES

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