

Successful Retrieval of an Embolized Left Atrial Appendage Closure Device Using the “Double-Snare” Technique

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An 85-year-old gentleman presented with chest pain and sustained ventricular tachycardia and underwent emergency Percutaneous Coronary Intervention (PCI) of his right coronary artery using drug eluting stents.

A staged PCI was planned for the Left Anterior Descending Artery (LAD) three days later. The patient was known to have atrial fibrillation for many years and we planned to occlude the Left Atrial Appendage (LAA) in the same sitting in order to avoid long-term triple therapy.

The LAA measured 24mm on Transesophageal Echocardiography (TEE) and 26mm on fluoroscopy and we used a 30 mm Amplatzer Cardiac Plug (ACP) to occlude it. The device had a stable position on TEE and after a “tug-test” it was implanted successfully.

Five minutes later while placing a guiding catheter to treat the LAD we observed embolization of ACP to the Left Atrium (LA). Surgical removal of the ACP and bypass grafting of the LAD was discussed but the consensus was to try and retrieve the device percutaneously.

A 14 mm sheath was placed transeptal across the same puncture site and a 35 mm 0.035” Amplatzer Goose Neck Snare (**ev3 Endovascular**) was used in order to snare the device at the screw. However, we were not successful in getting a stable position and subsequently decided to place the snare between the lobe and the disc to stabilize the device (A). A second 20 mm 0.035” Amplatzer Goose Neck Snare was then placed around the screw (B, arrow) and the tension of the larger snare was slowly released as we pulled on the screw. The device was successfully retrieved into the sheath without complications (C, D).

The patient was placed on aspirin, clopidogrel and warfarin and a 2nd attempt to close the LAA is planned in the near future.

Device embolization is a relatively rare complication after percutaneous LAA or PFO/ASD closure [1-4]. To our knowledge this is the first time the “double-snare” technique is being reported. It allows atraumatic removal of embolized devices and can potentially avoid open-heart surgery in these patients.

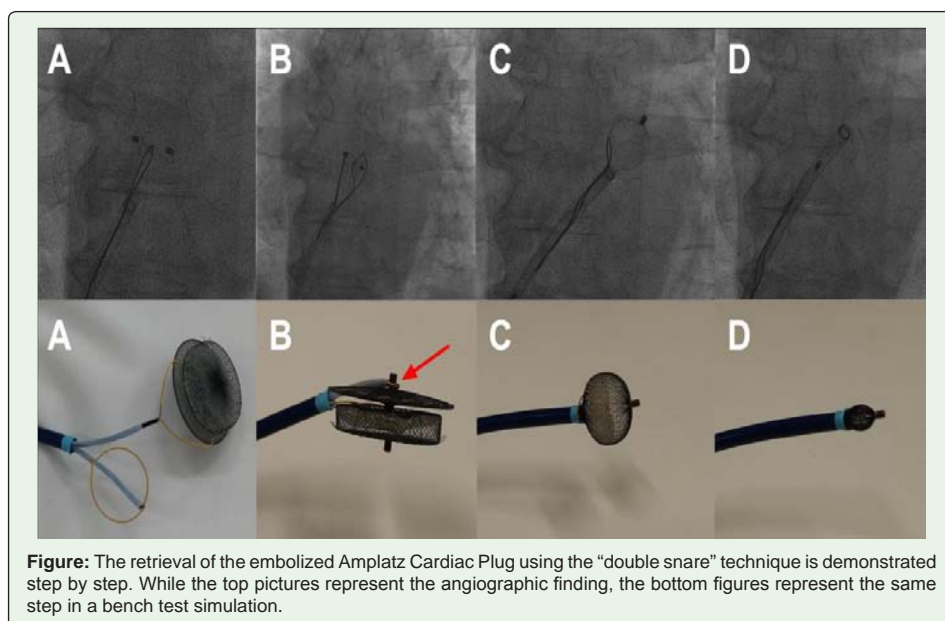


Figure: The retrieval of the embolized Amplatzer Cardiac Plug using the “double snare” technique is demonstrated step by step. While the top pictures represent the angiographic finding, the bottom figures represent the same step in a bench test simulation.

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