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IMAGES IN INTERVENTION

Acute Heart Failure Caused by Dislocation of a WATCHMAN Left Atrial Appendage Occluder

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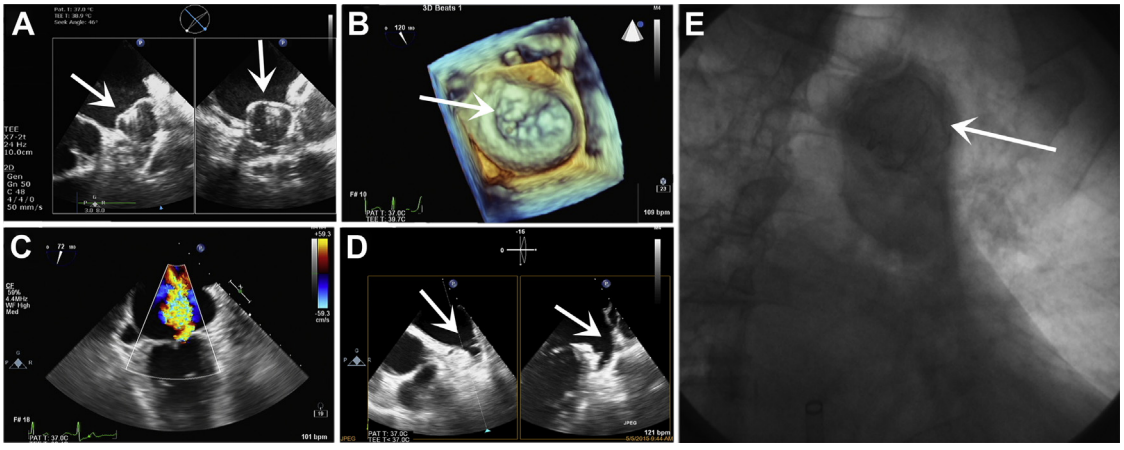
A 75-year-old man with permanent atrial fibrillation was referred to our hospital. Because of a high risk of cardioembolic stroke with a CHA2DS2-VASC (hypertension, age ≥75 years, coronary heart disease) score of 4 points and a strong contraindication for anticoagulants with a HAS-BLED (hypertension, labile international normalized ratios, elderly, renal dysfunction) score of 4 points, he was a good candidate for percutaneous left atrial appendage (LAA) occlusion. A standard implant

FIGURE 1 Dislocated WATCHMAN Device Causing Severe Mitral Regurgitation



(A) The final position of the device deployed at the left atrial appendage (LAA) ostium under transesophageal echocardiographic monitoring **(arrows)**. **(B)** Three-dimensional transesophageal echocardiography showing the anterior mitral leaflet prolapse **(arrow)**. **(C)** Transesophageal echocardiography showing severe mitral regurgitation. **(D)** Transesophageal echocardiography showing the absence of the device in the LAA **(arrows)**. **(E)** Fluoroscopic imaging showing the LAA device dislocated in the aortic arch **(arrow)**.

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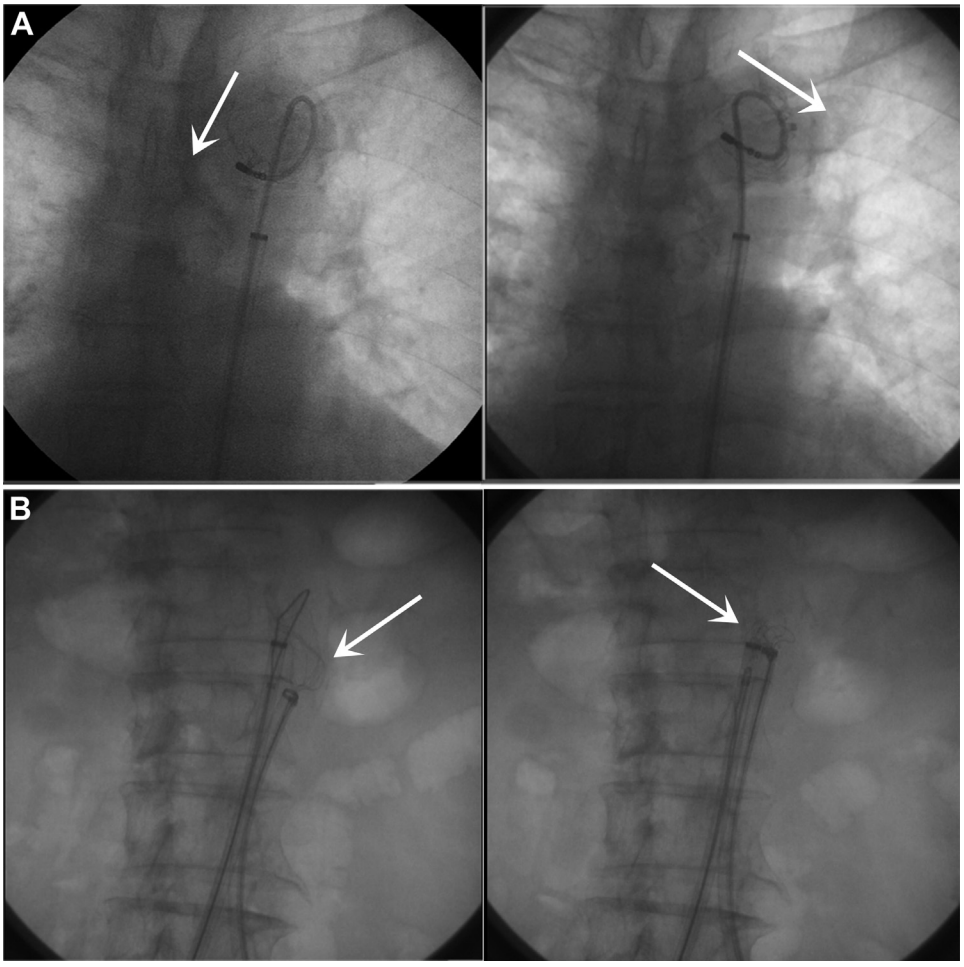
FIGURE 2 Percutaneous Retrieval of the Device by Combined Deflectable Ablation Catheter and Double Goose-Neck Snares

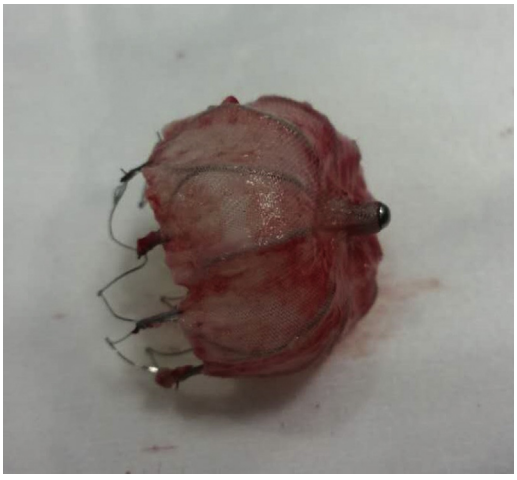


(A) Reversing direction **(arrows)** of the device with a deflectable ablation catheter. **(B)** The device **(arrows)** being pulled out by double goose-neck snares.

procedure was performed with the patient under general anesthesia. The procedure protocol has been described previously (1). A WATCHMAN LAA occluder (Boston Scientific, Marlborough, Massachusetts) (diameter, 30 mm) was successfully released at the LAA ostium under fluoroscopic guidance and continuous transesophageal echocardiographic monitoring (Figure 1A). The patient was asymptomatic and hemodynamically stable at discharge. However, he experienced acute left heart failure with dyspnea on exertion 30 days after the procedure. His symptoms were suddenly relieved with oral administration of digoxin and diuretic drugs. Echocardiographic assessment at the 45-day follow-up visit demonstrated ruptured mitral chordae tendineae (Figure 1B), severe mitral regurgitation (Figure 1C), and the absence of the implant either in the LAA or in any of the heart cavities (Figure 1D). Fluoroscopic imaging confirmed that the LAA device was located in the aortic arch (Figure 1E). After changing the direction of the device hub to the descending aorta by a deflectable ablation catheter (Figure 2A), the device was retrieved successfully using double goose-neck snares (10 and 15 mm in diameter) via bilateral femoral artery access with 14-F sheaths (Figure 2B). A completely endothelialized disk was observed (Figure 3).

This case shows that acute heart failure after successful LAA occlusion may imply acute mitral

FIGURE 3 Retrieved Device With a Completely Endothelialized Disk



The retrieved WATCHMAN device with a completely endothelialized disc.

dysfunction caused by mechanical damage of the mitral valve because of an LAA occluder dislocation. The unexpected symptom relief would most likely be due to the dislocated device running into aorta, which relieves obstruction of the left ventricular outflow tract. Percutaneous retrieval of the device is feasible, obviating further surgical intervention.

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KEY WORDS atrial fibrillation, dislocation of a WATCHMAN device, heart failure, left atrial appendage closure