



## PERCUTANEOUS RETRIEVAL OF EXTERNAL SUBSTANCE IN RIGHT CARDIAC CHAMBERS WITH LEFT ATRIAL APPENDAGE AND PATENT FORAMEN OVALE OCCLUSION

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### **History and physical:**

A 68 years old male patient was transferred from neurologic clinic. His past medical history had been hypertension, diabetes mellitus and hyperthyroidism. His past surgical history had been perforation of stomach 30 years ago. He had been dysarthria one week ago and suddenly right side weakness a day before the hospital visit. And then, it was request for consultation that he was hospitalized about cardiac embolic source evaluation for acute stroke.

### **Imaging:**

On trans-thoracic echocardiography (TTE) and trans-esophageal echocardiography (TEE), It revealed linear echogenic material (approximately 9.2cm) was seen in right atrium and right ventricle. It was suspicious on foreign body or calcified mass. It was no visible thrombus in left atrium and left atrial appendage (LAA) (LAA emptying velocity: 91cm/s). In intra-atrial septum, It appeared patent foramen ovale (PFO) that was slit length (0.14cm) and slit diameter (0.6cm) with resting shunt.

### **Indication for intervention:**

In spite of taking anticoagulation on warfarin controlled therapeutic range, he had been recurred on acute stroke during hospitalization. It was new on documented paroxysmal atrial fibrillation (CHA<sub>2</sub>DS<sub>2</sub>-VASc: 5) on electrocardiogram. He was transferred to cardiology division for the interventional treatment of LAA and PFO occlusion. We decided to remove the abnormal material at right cardiac chambers after consultation of multi-team approach (neurologist, cardiovascular surgeon and cardiologist).

### **Intervention:**

First of all, the right common femoral vein was punctured and instrumented with 8.5Fr SL-1 intravascular sheath via right femoral vein. The implantation procedure was performed under general anesthesia. Trans-septal approach was performed at PFO. After catheter placement into the LAA, LAA angiography was performed. And an optimal device size based on LAA



measurements with TEE guidance and angiogram was selected. The Amulet 18mm diameter was deployed by retracting the sheath covering the device. Successful device implantation and successful sealing of the LAA was confirmed by TEE and fluoroscopy. The delivery cable passed through the loader and the device (Amplazter PFO occlude 25/18mm) was screwed to the tip of the delivery cable. Under fluoroscopic and echocardiographic guidance, the left atrial disc and part of the connecting waist was deployed and the device was pulled gently the atrial septum. After correct placement was confirmed by TEE, the device was released. Finally, we tried to advance 30mm snare with straight guiding catheter and use forceps-assisted device to cardiac biopsy for removal of foreign body at right cardiac chambers. However, all of that failed. But we tried again approach at jugular vein puncture with Omni™ catheter. Foreign body at right cardiac chambers was switched position. It was approach to re-femoral puncture on 30mm snare with multi-purpose catheter. It was successful removal of foreign body at right cardiac chambers for procedure time (4 hours) without complication.

**Learning points of the procedure:**

What was the point that cause for recurrent stroke about paroxysmal atrial fibrillation and PFO and foreign body at right cardiac chambers?

How and when did the foreign body at right cardiac chambers put into the patient's body?