



Percutaneous Retrieval of Embolized Left Atrial Appendage Occluder Followed By Reimplantation of Different Type Device

Jan Zbigniew Peruga*, Edyta Ćwiek-Rębowska, Ewa Szymczyk, Łukasz Jankowski and Jarosław Kasprzak

Department of Cardiology, Medical University in Łódź, Poland

Clinical Image

Percutaneous closure of the Left Atrial Appendage (LAA) is a novel approach to the prevention of embolic events in patients with Atrial Fibrillation (AF), high risk of stroke and contraindications to long-term anticoagulation. However, periprocedural and postprocedural complications (including cardiac tamponade, procedural stroke, and embolization of device or transient myocardial ischemia) are common and may outweigh the benefits of avoiding anticoagulants [1]. Embolization of LAA closure device has been reported with the average rate of less than 4% and occurred mainly in the early postprocedural period [2,3]. We report the case of 67-year old male patient with paroxysmal atrial fibrillation and the history of three hemorrhagic strokes who was admitted for percutaneous Left Atrial Appendage (LAA) closure procedure. Using Transoesophageal Echocardiography (TOE) and fluoroscopy guidance (diameter of the landing zone in TOE – 18 mm) the 22-mm Amplatzer Amulet was successfully implanted in the LAA. The correct position of the device was confirmed the following day in Transthoracic Echocardiography Examination (TTE). The image did not reveal any echocardiographic features of residual shunt or pericardial effusion. During the follow up the patient remained asymptomatic. After eight weeks, the scheduled TTE and TOE examinations revealed an absence of the cardiac plug in the expected position with no signs of device entrapment in the left heart. Fluoroscopy and computed tomography angiography allowed to localize the LAA occluder in the abdominal aorta at the level of the renal arteries (Figure 1A). In the face of the fact that little is known about equipment used during retrieval of dislodged LAA occluders, the

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*Correspondence:

Jan Zbigniew Peruga, Department of Cardiology, Medical University in Łódź, Poland,

E-mail: jzperuga@op.pl

Received Date: 08 Mar 2021

Accepted Date: 30 Mar 2021

Published Date: 02 Apr 2021

Citation:

Peruga JZ, Ćwiek-Rębowska E, Szymczyk E, Jankowski Ł, Kasprzak J. Percutaneous Retrieval of Embolized Left Atrial Appendage Occluder Followed By Reimplantation of Different Type Device. *Clin Surg.* 2021; 6: 3117.

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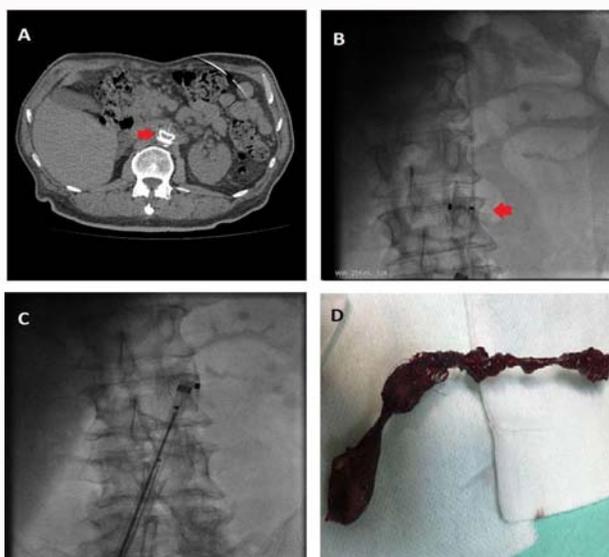


Figure 1: A: Computed tomography scan showing dislocation of Amplatzer Amulet to abdominal aorta (red arrow). B and C: 16 Fr steerable sheath (Check-Flo Performer Introducer) was introduced into femoral artery. Next, the guide catheter 7F Launcher AR-1 was introduced via the sheath with Maslanka grasping forceps and Multi snare. The snare was used to change the direction of the device (red arrow), so it enabled the capture of the LAA occluder with grasping forceps. D: Amplatzer Amulet was removed percutaneously without its defragmentation thus there was no necessity of surgical intervention. The procedural duration was 1.5 hours and fluoroscopic time was 51 minutes.

eligibility for the percutaneous procedure was the principal concern. Due to high surgical risk, percutaneous removal of migrated occluder with the surgery backup was chosen as the first line intervention (Figure 1B and 1C). Using Maslanka grasping forceps and the Multi-Snare we were able to remove dislocated device via femoral artery without its defragmentation (Figure 1D). Ten weeks after successful retrieval, uncomplicated LAA closure was repeated with larger size watchman 24 mm device. The previously described potential mechanisms causing LAA closure devices embolization included undersizing, excessive oversizing, incorrect device apposition or conversion from AF to sinus rhythm after the procedure [3]. In our patient, the reason for embolization was not absolutely clear since it occurred despite confirming the proper position of the device at the end of the implantation process. The diameter of the landing zone was measured during TOE and fluoroscopy and the values taken were corresponding. In our case, the under-sizing due to the hypovolemia during measurements of an appendage with preserved contractile function was proposed as the underlying cause of device migration. To avoid possible under-sizing due to the volume contraction at the second attempt of LAA closure, the additional infusion of 1000

ml of normal saline was ordered prior to the procedure. Presented case proves that percutaneous retrieval of migrated LAA occluder *via* femoral artery is technically feasible, safe and leads to favourable results. Left atrial appendage closure procedure may be successfully repeated using larger size or different type device.

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