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Official journal of the
TURKISH
SOCIETY OF
CARDIOLOGY

Percutaneous Retrieval of an Atrial Septal Defect Closure Device Embolized to the Abdominal Aorta

Abdominal Aortaya Embolize Olan Atriyal Septal Defekt Kapama Cihazının Perkütan Yolla Çıkarılması

CASE IMAGE
OLGU GÖRÜNTÜSÜ

A 24-year-old female patient with a diagnosis of paradoxical cerebral embolism and a secundum-type atrial septal defect (ASD) (Video 1) was admitted for percutaneous ASD closure. A 9 mm Amplatzer Septal Occluder (ASO; Abbott, St. Paul, MN) device was successfully deployed. After confirming stability with a pull and push maneuver, the Pacman sign was observed (Figure 1, Video 2). There were no periprocedural complications, and echocardiography confirmed the device was correctly positioned before discharge. However, at the 1-month follow-up, she reported leg pain over the past few days. Transthoracic echocardiography failed to visualize the ASD closure device in the interatrial septum. Fluoroscopy showed the device in the abdominal aorta (Video 3), and computed tomography (CT) angiography confirmed it was located at the level of the right renal artery (Figure 2). A percutaneous retrieval was planned. The device was retrieved from the right femoral artery using a gooseneck snare supported by a FlexCath® Steerable Sheath (Medtronic, Minneapolis, MN). The right atrial screw was captured by the snare, and the device was successfully retrieved into the sheath (Video 4). Post-procedure, the patient experienced weakened pulses in the right posterior tibial and dorsalis pedis arteries. CT angiography revealed a limited dissection in the right common iliac artery with no significant limitation of flow in the superficial and deep femoral arteries (Figure 3). However, there was no flow in the distal segments of the anterior tibial and posterior tibial arteries, likely due to thromboembolism. No signs of acute limb ischemia were observed in the lower extremities. Initial treatment included an unfractionated heparin infusion, with all distal pulses becoming palpable after 6 hours of anticoagulation. The rest of the hospital stay was uneventful. Upon discharge, she was transitioned to enoxaparin therapy. At the patient's request, the ASD closure procedure was postponed to a future hospitalization.

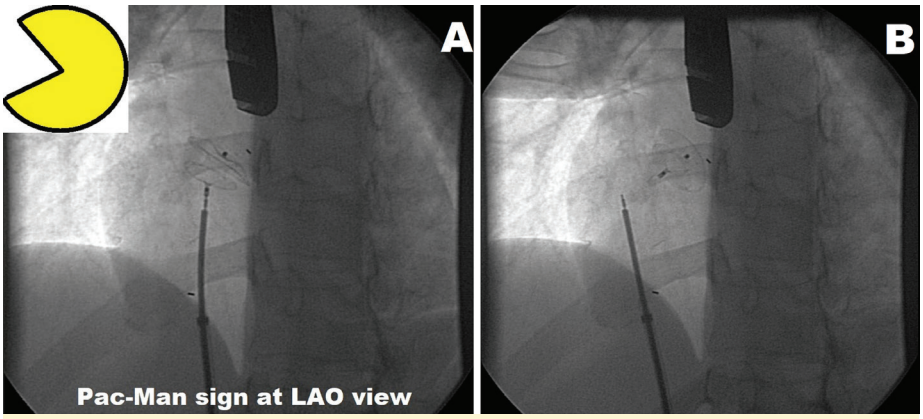

Figure 1. (A) Evaluation of the stability of the atrial septal defect closure device using a push and pull maneuver (Pac-Man sign, left anterior oblique view), and (B) its subsequent release.

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Received: November 16, 2023
Accepted: November 22, 2023

Cite this article as: Deniz Ç, Canpolat U, Aytemir K. Percutaneous Retrieval of an Atrial Septal Defect Closure Device Embolized to the Abdominal Aorta. *Turk Kardiyol Dern Ars.* 2024;52(8):617-618.

DOI:10.5543/tkda.2023.80469

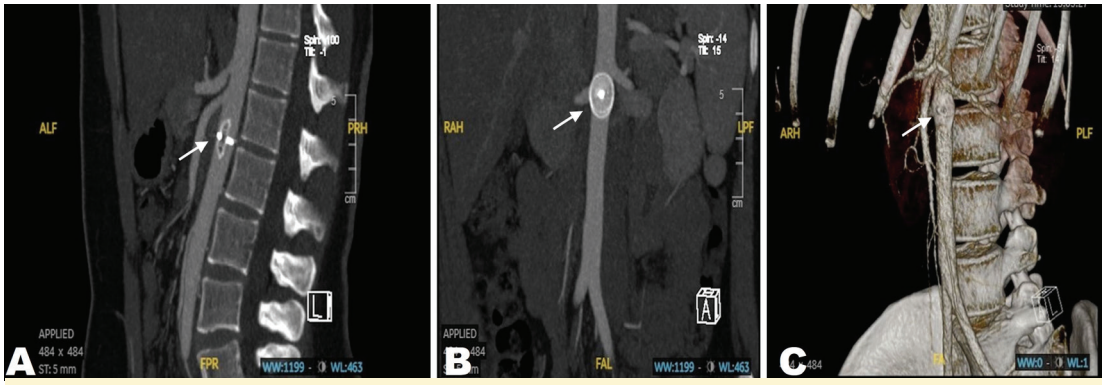

Figure 2. 2D and 3D evaluation of the atrial septal defect (ASD) closure device's position and its relationship with neighboring structures by computed tomography (CT) angiography. (A) The right disc adjacent to the anterior wall of the abdominal aorta, (B) the device at the level of the right renal artery and L1-2 discs, (C) causing distortion of the aorta wall.

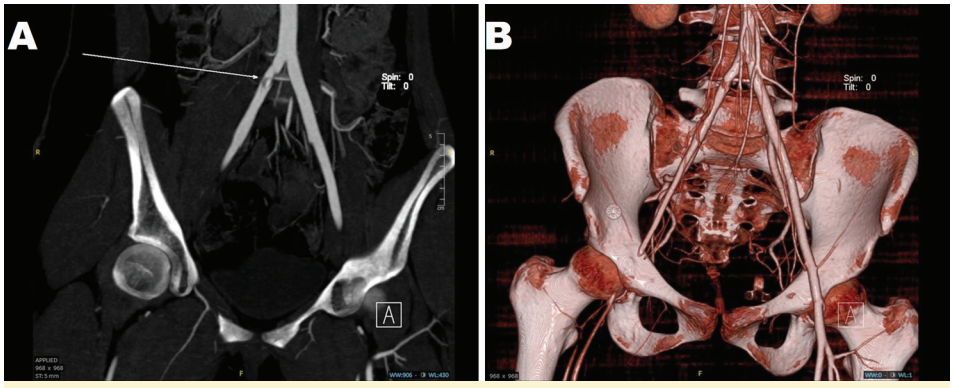

Figure 3. A limited dissection at the right common iliac artery depicted in peripheral CT angiography following retrieval of the ASD closure device (A-B).

Informed Consent: Written informed consent was obtained from the patient.

Peer-review: Internally peer-reviewed.

Author Contributions: Concept – Ç.D., U.C., K.A.; Design – Ç.D., U.C., K.A.; Supervision – U.C.; Materials – U.C.; Data Collection and/or Processing – Ç.D., U.C., K.A.; Analysis and/or Interpretation – Ç.D., U.C., K.A.; Literature Review – Ç.D., U.C., K.A.; Writing – Ç.D., U.C., K.A.; Critical Review – Ç.D., U.C., K.A.

Conflict of Interest: The authors have no conflicts of interest to declare.

Funding: The authors declared that this study received no financial support.

Video 1. Cardiac magnetic resonance imaging demonstrating a secundum-type ASD.

Video 2. Testing the stability of the ASD closure device just before its release.

Video 3. Fluoroscopic visualization of the ASD closure device in the abdominal aorta (anteroposterior and left lateral views).

Video 4. Successful snaring and retrieval of the ASD closure device into the steerable sheath.