RECURRENT NEUROLOGIC ISCHEMIC EVENT AFTER PFO DEVICE CLOSURE IN A PATIENT WITH MULTI-FENESTRATED INTER ATRIAL SEPTUM

Sedigheh Saedi,[1], Ata Firouzi,[2]

[1] Rajaei Cardiovascular Medical and Research Center, Iran University of Medical Sciences, Tehran, Iran, [2] Rajaei Cardiovascular Medical Research Center

Correspondence: Sedigheh Saedi, sedsaedi@gmail.com

History and physical:

A 30-year-old lady, ophthalmologist with history of transient ischemic attack (TIA) underwent device closure for patent foramen ovale(PFO) in another center about six months ago. She presented with recent episode of left arm paresthesia of less than 24hours duration compatible with a recurrent TIA. She regularly used aspirin 80mg/daily and clopidogrel 75mg/daily over the last six months. Hematologic and rheumatologic evaluations were negative for evidence of hypercoagulability or vasculitis.

Imaging:

Contrast transthoracic echocardiography showed many bubble passage from the inter atrial septum (IAS). In transesophageal echocardiography(TEE) previous device occluder was seen on the IAS, 12mm farther from the PFO site and the PFO tunnel was not covered by this device. In fact, the previous device had covered a small atrial septal defect (ASD). The PFO was 4mm width with a tunnel length of 7mm and significant bubble passage with and without provocative maneuvers. There was also a small fenestration (2mm) at the antero-superior rim of previous device with left to right shunt.(Figure1).

Indication for intervention:

Considering recurrent neurologic event, the patient was a candidate for closure of residual defects.

Intervention:

As there was a fenestration in addition to PFO we decided to use a device dedicated for closure of multi-fenestrated atrial septal defects. Under TEE guidance the PFO was wired and closure of residual fenestration and PFO was done with Figulla Flex II UNI Occluder (24mm) without any complications. Proper positioning of the device and obstruction of the PFO and fenestration

was confirmed by echocardiography before releasing the device. In contrast study performed during and 24 hours after the procedure no residual shunt or bubble passage was seen with and without vigorous Valsalva maneuver. (Video2).

Learning points of the procedure:

Presence of residual shunts after device of closure of PFO results in increased risk of recurrence of strokes or TIAs . The residual PFO shunt, especially if moderate or large, continues to pose a risk for paradoxical embolism.

Pre-procedural planning and precise evaluation of septal anatomy for high risk PFOs (Atrial septal aneurysm, long chiari network, prominent eustachian valve, long tunnel, multi-fenestrated septum…) is important for achieving complete obstruction and optimal results. Whenever necessary, devices designed for closing multi-fenestrated atrial septal defects including The Amplatzer™ Cribriform Multifenestrated Septal Occluder and the Flex II UNI Occluder could be used.

Long-term clinical follow-up with contrast echocardiography should be performed every 3 to 6 months during the first year and every 6 to 12 months thereafter to ensure full obstruction. In high-risk patients with a persistent moderate or large shunt, we recommend multidisciplinary assessment for a second device closure or lifelong anticoagulant therapy.

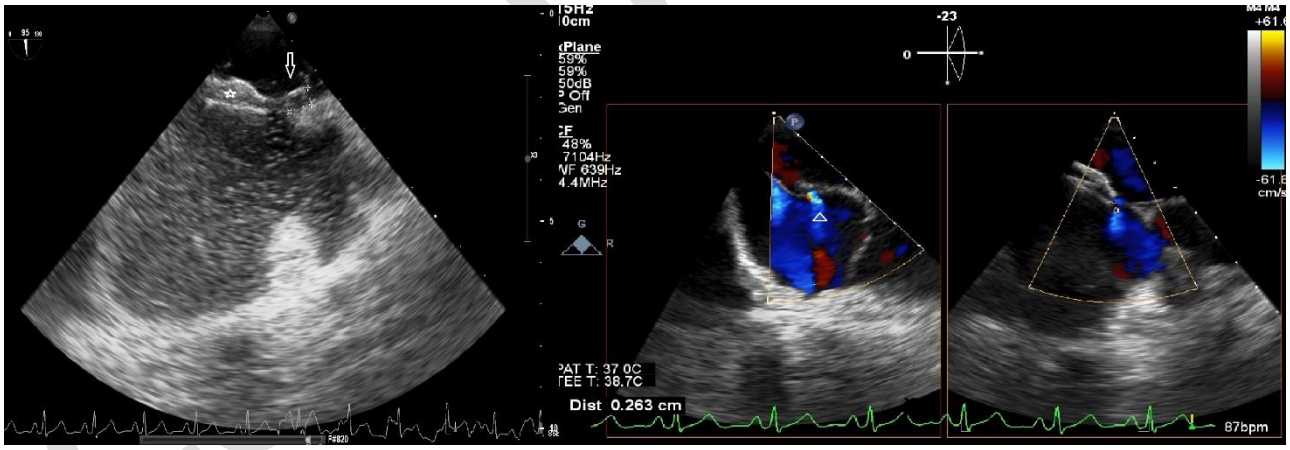

Figure1: TEE image of the previous device (star), the PFO (arrow) and the fenestration (arrow head).

Video 2: Deploying the second device for residual shunts.