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To close or not to close: Percutaneous device closure in an elderly patient with recurrent strokes and newly diagnosed atrial septal defect (ASD) with patent foramen ovale (PFO) and atrial septal aneurysm (ASA)

Marvin Louis Roy Lu, Mahek Shah and Marjorie Stanek
Albert Einstein Medical Center, USA

Introduction: Whether patients who have ASD with PFO presenting with recurrent cryptogenic strokes need to undergo percutaneous device closure is still a subject of debate. The success rates of PFO closure vary widely (51-100%) across studies and with a complication rate of 4.6%. The data linking ASD with PFO and cryptogenic stroke are limited, and often contradictory.

Case: 85 year old female with a history of NSTEMI s/p 3 baremetal stents, recurrent ischemic strokes, chronic lower extremity DVT and a previous transesophageal echocardiogram showing PFO with ASA, presented with blurring of vision and right lower extremity weakness. MRI of the brain revealed a new cardio-embolic stroke in the left occipital region. She was on aspirin and coumadin. Repeat TEE confirmed an atrial septal aneurysm and with new fenestrations, a left to right shunt, and PFO. Carotid duplex showed moderate stenosis of both internal carotid arteries and lower extremity venous dopplers revealed an improved left popliteal thrombus. Patient was admitted for percutaneous ASD closure.

The procedure was aborted after she suffered an atrial wall perforation resulting to a small pericardial effusion. After which she developed new onset atrial fibrillation and hypotension requiring a brief course of vasopressors. She was then continued on medical therapy and has been stable 6 months after discharge.

Discussion: Patients with ASD and PFO presenting with recurrent strokes despite being on optimal medications are usually evaluated for percutaneous device closure. However, data on these patients is scant and often conflicting. Age and comorbidities are factors that greatly affect the association between PFO and cryptogenic stroke. Case control studies showed an insignificant relative risk of stroke in elderly patients with PFO. In prospective cohorts, one study showed that patients with combined PFO and ASA had a significantly higher risk of stroke at 4 years compared to those without. The use of percutaneous PFO closure for the indication of cryptogenic recurrent stroke has been increasing in frequency and it too carries substantial risks such as cardiac perforation, pericardial effusion and atrial fibrillation like what happened to our patient. The RESPECT trial showed a trend towards superiority of PFO closure compared to medical management although this was not significant. However, in a pre-specified population, PFO closure did have a significantly lower risk of recurrent stroke. The PC trial showed no benefit over medical management. Overall, with these contradictory evidences, care for this subset of patients should still be individualized.

Biography

Marvin Louis Roy Lu has completed his M.D. at the age of 25 years from University of Santo Tomas in the Philippines and is currently a PGY 1 resident at Albert Einstein Medical Center, Philadelphia.

LuMarvin@einstein.edu