

44. PFO-Patent Foramen Ovale

A. Problem:

1. Patent foramen ovale (PFO) have been associated with cerebral infarction and transient ischemic attack (TIA) resulting from paradoxical embolism.
2. Preventive strategies with a previous stroke that have both a patent foramen ovale and an atrial septal aneurysm (ASA). Either lesion alone was not found to be at substantial risk for recurrent stroke.
3. PFO's are present in one quarter of the general population.

B. Indications for Closure

1. Transient Ischemic Attacks with PFO & ASA
 - Recurrent events
 - Failure of oral anticoagulation
 - Instead of oral anticoagulation
2. Peripheral and cardiac emboli
3. Migraines aura?
4. Platypnea-orthodeoxia syndrome
5. Refractory Hypoxia

The cardiac origin of emboli remains presumptive, PFO closure is usually reserved for patients without significant risk factors for atherosclerosis. Cryptogenic strokes

Cryptogenic Stroke: Brain infarction not attributable to large artery atherosclerosis or small CNS artery disease despite vascular, cardiac, and serologic evaluation. Age usually <55 years with few cardiac risk factors.

C. **Physical:** No findings.

D. Imaging Studies

1. Trans thoracic Echocardiogram (TTE) v
2. Transesophageal Echocardiography (TEE) with or without bubble study
3. Transcranial Doppler (TCD)
4. Intracardiac Echocardiography (ICE) usually done during closure procedure.

Patent foramen ovale in stroke patients does appears different in that it is usually larger, has a stretch diameter of up to 12mm, and is commonly associated with an atrial septal aneurysm

E. Treatment

1. Coumadin (Warfarin), thin out the blood and reduce the risk of a clot
3. Open-heart surgery with its associated complications is rarely done
3. Closure Devices:
 - a) CardioSEAL® was approved by the FDA in 2000
 - b) Amplatzer PFO Occluder
 - c) Gore-HELEX Septal Occluder
 - d) PFO Star
4. FDA Approved under the Humanitarian Device Exemption hospital's Institutional Review Board must approve the performance of closure procedures at the hospital.

