Patent Foramen Ovale (PFO), Atrial Septal Aneurysm (ASA)

Patent foramen ovale is a valve-like opening in the atrial septum, the wall between the atria of the heart. The PFO is the persistence of a normal fetal structure – which may permit embolic material to pass from the right-sided (venous) circulation to the left-sided (arterial) circulation. Such “paradoxical” emboli may then travel to the central nervous system, causing a temporary neurological impairment (transient ischemic attack or TIA) or permanent neurological damage due to a stroke, a cerebral vascular accident (CVA). PFOs are common in the general population and most are silent.

An ASA is merely an excessively floppy septum. ASA by itself is little risk. Most are associated with a PFO.

A PFO that is “high risk” for paradoxical embolus can have one of the following:

- Presence of a Chiari network
- “Tunnel” PFO
- Large size >5 mm
  - High degree of mobility >6.5 mm
- Spontaneous right-to-left shunt (without provocative maneuvers such as Valsalva)
- Large shunt >20 bubbles
- Associated with ASA

Each year, many young Americans suffer a TIA or CVA event. Often, the underlying cause remains unexplained despite an extensive evaluation for conditions such as clotting disorders, intracardiac clots from wall abnormalities or valve disease, atherosclerosis of the carotid arteries or aorta, and small vessel disease in the brain. If unexplained, the event is termed “cryptogenic”. Sometimes, if a PFO or ASA is visualized on echocardiogram (transesophageal echo preferred), the event is blamed on a “paradoxical” embolus. It is controversial whether closure of the defect is warranted. Studies are on-going to resolve this question.

PFO and ASA are not rated if they are found incidentally on an echocardiogram. If the echocardiogram was done as part of the work-up for a TIA or CVA, the rating is assessed for TIA or CVA.