

ECHOCARDIOGRAPHY

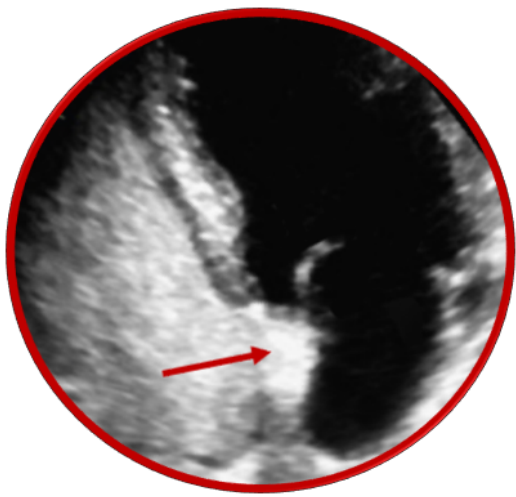
4 THINGS TO RULE OUT PFO

BUBBLE STUDY



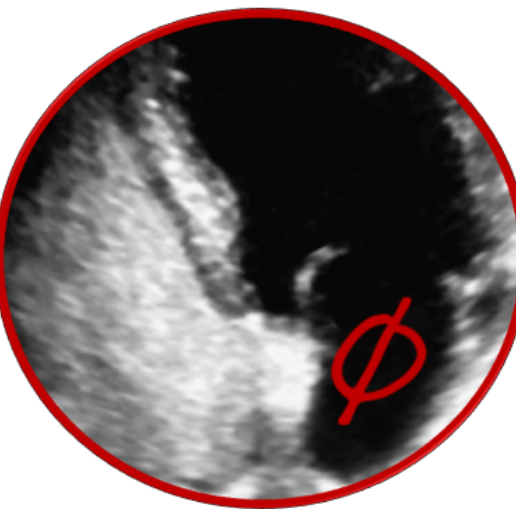
DENSE OPACIFICATION

For an accurate echo bubble-study, the saline should be sufficiently agitated resulting in the *dense* opacification of the right heart.



LEFT SHIFT OF IAS

If the resting bubble study is negative, repeat with Valsalva. With the correct Valsalva Technique, the interatrial septum (IAS) will shift from right to left



NO BUBBLES IN THE LA

In a correctly performed bubble-study, the absence of bubbles in the left atrium within 1-3 cardiac cycles usually rules out a patent foramen ovale (PFO).



LATE BUBBLES

Late bubbles (3-8 cardiac cycles) within the left atrium represents a PAVM (pulmonary arteriovenous malformation) and usually rules out a PFO.