

Point-of-care echocardiography

DIAGNOSING PERICARDIAL TAMPONADE

Cardiac tamponade is a clinical diagnosis, but point-of-care echo findings can provide evidence of early tamponade. There are two-dimensional (2D) and Doppler findings.

Pericardium

As intrapericardial pressure begins to exceed intracardiac pressure, tamponade develops. Look for **late diastolic collapse** of the right atrium and **early diastolic collapse of the right ventricle** as the pericardial pressure increases.



Late diastolic

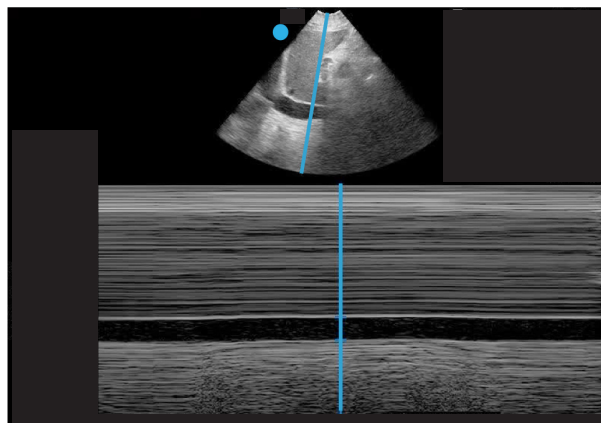


Early diastolic

It can be helpful to imagine looking for someone jumping on the trampoline of the right ventricle or atrium to see this collapse on ultrasound.

Inferior vena cava (IVC)

As obstructive physiology develops in tamponade, right atrial filling pressure increases, and is transmitted to the IVC. In tamponade, we expect a dilated (> 2 cm) IVC with minimal respiratory variation.



Doppler

As tamponade develops, changes in interventricular dependence lead to changes in inflow across the mitral and tricuspid valve with respiration. This is pulsus paradoxus. A $> 25\%$ change with respiration is consistent with echo tamponade.

