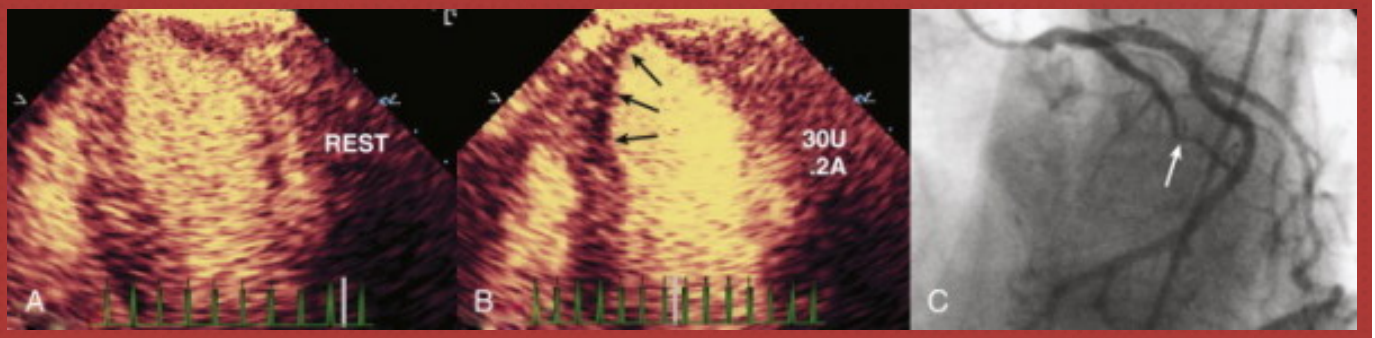
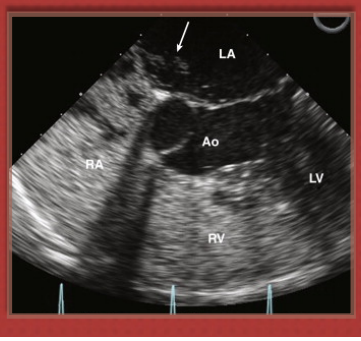
RIGHT & LEFT HEART CONTRAST AGENTS





What is Contrast Echocardiography and when is it indicated?

Contrast echocardiography refers to the injection into the bloodstream of an agent that results in increased echogenicity of the blood or myocardium on ultrasound imaging, producing opacification of the cardiac chambers or an increase in echo density of the myocardium. Ultrasound "contrast" is generated by the presence of microbubbles in the ultrasound field. At low ultrasound power outputs, microbubbles scatter ultrasound at the gas-liquid interface, resulting in the detection of a strong signal by the transducer. Fundamental ultrasound imaging is based on detection of this signal reflected from the gas-liquid interface..

Contrast Agents

There are two types of echo-contrast agents, those that opacify the:

- Right heart
- Left heart & Myocardium

The most widely used agent for contrast of the right heart is agitated saline. Commercially available contrast agents for the left heart consist of air or low solubility fluorocarbon gas in stabilized microbubbles encapsulated with denatured albumin, monosaccharides, or other formulations.

Applications

Contrast echocardiography has four proposed diagnostic applications:

- Detection of intracardiac shunts
- Enhancement of Doppler signals
- LV opacification
- Myocardial perfusion

Reference: Textbook of Clinical Echocardiography: Cathrine Otto 2013