

Technology Update #1

Definity to assess LV chamber Contributed by: Monika Goral RDCS

Poorly visualized LV need not be a limiting factor in assessing LV function or LV mass. In the present case the patient had a technically limited echo. There was side lobe artifact in the LV chamber due to atelectatic lung seen laterally. The physician interpreting the echo was concerned about a possible mobile mass at the apex.

A bolus of Definity was administered. When the microbubbles fill the LV the images show that there is no mass at the apex. Muscular trabeculation was responsible for the confusion.

We find using Definity to clarify LV endocardial borders or presence of questionable masses at the apex highly useful. In many cases it can obviate the need to do a TEE. Since the apical region is often the area in question even a TEE may not be that useful since the apex is in the far-field.

Technique:

1. Obtain a 4-chamber dataset
2. Activate Definity
3. 1.3 cc is then diluted to 10 cc with saline and 3 cc is administered as a bolus. The echo machine is placed on a low MI (mechanical index) $<.5$ to aid in bubble persistence.
4. Images are obtained. Patient is observed closely after administration in accordance with guidelines.

References:

1. Kitzman DW et al. Efficacy and Safety of the Novel Ultrasound Contrast Agent Perflutren (Definity) in Patients With Suboptimal Baseline Left Ventricular Echocardiographic Images. *Am J Cardiol.* 2000; 86:669-674.
2. Weissman NJ, Infusion versus bolus contrast echocardiography: A multicenter, open-label, crossover trial. *Am Heart J* 2000; 39(3): 399-404.
3. Lang RM et al. Recommendations for chamber quantification: a report from the American Society of Echocardiography's Guidelines and Standards Committee and the Chamber Quantification Writing Group, developed in conjunction with the European Association of Echocardiography, a branch of the European Society of Cardiology. *J Am Soc Echocardiography* 2005; 18(12): 1440-1463.