

Alternate Echocardiography Guidelines with Reduced Power Settings

The implanted WiSE CRT Electrode is an ultrasound sensitive device used to pace the heart.

In rare instances, the ultrasound imaging probe has the potential for the electrode to convert the ultrasound energy into extra stimuli. Safe use of transthoracic ultrasound requires the patient to be monitored at all times by an ECG and an external defibrillator to be available. The WiSE electrode is generally *not* sensitive to routine ultrasound imaging. However, in rare circumstances extra stimulation has been **associated with:**

- **Apical or Near-Apical Electrode implant**
- **Echo imaging from Apical views**

An example image of an apical Electrode implant (arrow) imaged from the apical window is shown to the right. In these cases, the transmit power of the ultrasound imaging system must be lowered to prevent extra stimulation.



If an Apical Electrode position is discovered, or premature ventricular contractions (PVCs) occur in what was previously a stable background ECG (with no PVCs) immediately remove the probe from the patient and resume scanning using the following protocol:

Step 1 Decrease the transmit power MI to the lowest setting.

Reduce the power setting MI to the **lowest possible setting** as done with echo contrast imaging in routine clinical practice, usually an MI much less than 1.0. For example MI = 0.13. Confirm power reduction is system displayed MI level.

Step 2 Increase transmit power MI step by step until either:

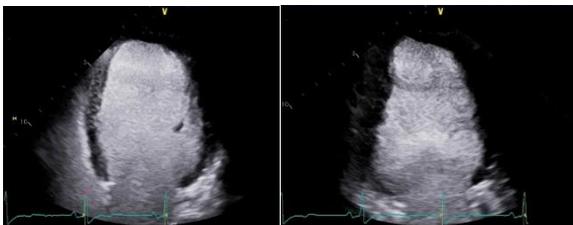
- Image quality is adequate to see LV endocardium for LV volume determination,
OR
- Extra stimulation is observed. **STOP** Stop if any extra stimulations occur.

In general, it is not advised to increase MI over 1.0.

Step 3 Based on the results of Step 2, complete the apical imaging protocol in the handbook

Result a) Extra stimulation did not occur in Step 2: Use the MI power setting for routine imaging that resulted in adequate image quality and complete echo protocol

Result b) Extra stimulation occurred in Step 2:



Use Contrast:

If extra stimulation was observed before adequate image quality can be obtained, use an iv injection **echo contrast agent with lowest MI settings**. Follow contrast product instructions for routine clinical use. Obtain apical 4-C (far left) and 2-C (left) views as shown.

Please do not hesitate to contact the echo core lab and/or EBR systems for further assistance.