DETECTION OF LEFT ATRIAL APPENDAGE THROMBUS IN SETTING OF ATRIAL FIBRILLATION OR ATRIAL FLUTTER WITH CONTRAST TRANSESOPHAGEAL ECHOCARDIOGRAPHY

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Background: Contrast echocardiography has been shown to improve endocardial border visualization and also increase the sensitivity in detecting left ventricular thrombus. In October 2007, the Federal Drug Agency issued a black box warning for contrast agents used in patients undergoing echocardiography. This safety concern has been disproven by several studies. We aim to provide data to support the safety of ultrasound contrast and demonstrate an expanded role of contrast agents in the diagnosis of atrial thrombi.

Methods: We retrospectively reviewed 200 consecutive patients who underwent transesophageal echo (TEE) with contrast (Definity, Optison) and 200 patients without contrast in the setting of atrial fibrillation/flutter for detection of left atrial appendage thrombus. We collected data on sex, age, detection of thrombi, transient ischemic attack (TIA) or stroke within six months of TEE, and side effects to contrast. The 200 patients who received contrast with TEE dated from June 2011 to April 2004. The 200 patients who did not receive contrast had a TEE between May 2011 and September 2009.

Results: In the TEE with contrast group, 158 patients had atrial fibrillation and 42 patients with atrial flutter. In addition, Definity was given to 83 patients and Optison to 117 patients. 71% were males and 29% were females with a mean age of 66. The detection rate of thrombus in this population was 22/200 (11%). None of these patients had a stroke or TIA within six months of TEE, and side effects to contrast. The 200 patients who received contrast with TEE dated from June 2011 to April 2004. The 200 patients who did not receive contrast had a TEE between May 2011 and September 2009.

Conclusion: Our data support prior studies concerning the safety of ultrasound contrast. In addition, patients who received contrast had a thrombi detection rate of 11% compared to 7% who did not receive contrast (p = 0.025). Although TEE alone is quite sensitive for detection of thrombus, our data suggest that there may be an incremental value for the addition of contrast in the detection of atrial thrombi.