UTILITY OF INTRACARDIAC ECHOCARDIOGRAPHY IN SETTING OF CARDIAC DEVICE-RELATED ENDOCARDITIS AND LEAD EXTRACTION

Poster Contributions
Poster Hall B1
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Authors: Aswin Mathew, Parshva Patel, Ashwani Gupta, Joshua Grant, Heath Saltzman, Andrew Kohut, Steven Kutalek, Drexel University College of Medicine, Philadelphia, PA, USA

Background: Transesophageal echocardiography (TEE) is currently the gold standard for diagnosis of cardiac device-related endocarditis (CDE) with a sensitivity of 94-96%. Intracardiac echocardiography (ICE) is routinely used during lead extraction procedures for early identification of procedural complications, especially tamponade. However, ICE can also provide valuable information regarding identification of endocarditis.

Methods: We identified patients, who underwent both pre-extraction TEE and intraoperative ICE during lead extraction at our center between January 2009 and December 2012. We reviewed data regarding patient demographics, comorbidities, microbiology, pre-extraction TEE, and intraoperative ICE reports. TEE and ICE imaging were compared using McNemar’s test.

Results: Between January 2009 and December 2012, 46 patients underwent both pre-extraction TEE and intra-operative ICE imaging during lead extraction. Nine patients underwent extraction for pocket infection and 36 for bacteremia. Of the 36 patients (78%) who had vegetations, 33 patients had right-sided vegetations and 3 had both left and right-sided vegetations. There were 7 patients that had vegetations identified by TEE (7 right-sided vegetations), but not by ICE, 4 of these patients had bacteremia. Four patients had vegetations visualized by ICE (4 right-sided and 1 left-sided vegetation) but not by TEE, and all four of these patients had bacteremia. When compared with TEE as a gold standard, ICE had a sensitivity, specificity, positive predictive value and negative predictive value of 86.2, 58.8, 78.1 and 71.4, respectively. There was no statistical difference between TEE and ICE (p value 0.549 by McNemar’s test).

Conclusion: Our data suggests that though TEE remains the gold standard for diagnosis of cardiac device-related endocarditis, intra-operative ICE imaging can identify vegetations in some patients missed by TEE. Concomitant use of both modalities can increase the sensitivity of detection of CDE. ICE is a relatively safe procedure and should be considered in all patients undergoing lead extraction procedure, especially for infectious indications.