



DIFFERENCES IN STRUCTURAL HEART INTRAPROCEDURAL TRANSESOPHAGEAL ECHOCARDIOGRAM PROCEDURES VERSUS STANDARD OF CARE NON-PROCEDURAL HOSPITAL TRANSESOPHAGEAL ECHOCARDIOGRAMS

Abel Ignatius,¹ James Lee,¹ Pedro Villablanca,¹ Sachin Parikh,² Bobak Rabbani,¹ Bryan Zweig,¹ Tiberio Frisoli,¹ Brian O'neill,³ William O'neill,¹ Dee Dee Wang,⁴

¹ Henry Ford Hospital, ² Henry Ford Hospital; Cardiology; Adult Cardiology, ³ Henry Ford Hospital; .. ⁴ Henry Ford Hospital; Director Structural Heart Imaging; Adult Cardiology

BACKGROUND

Intraprocedural imaging transesophageal echocardiogram (TEE) guidance for transcatheter mitral valve repair (TEER) have unique differences from standard of care (SOC) TEE studies. Objective differences in complexity have not been previously characterized.

OBJECTIVE

This study quantitates the complexity of structural heart intraprocedural TEE used to guide TEER versus SOC TEEs performed in non-TEER procedural guidance settings.

METHODS

Structural heart intraprocedural TEEs performed to guide TEER procedures at a single center were analyzed in comparison with a control group of SOC inpatient and outpatient TEE studies. Complexity was quantified by evaluating the total duration of studies, total number of images captured, number of 3-D clips and number of biplane clips captured. Mean and standard deviation were calculated and compared between the intraprocedural and SOC TEE groups. Non-parametric Wilcoxon rank sum tests were used to determine statistical significance.

RESULTS

Between October 2020 to June 2021, 50 sequential intraprocedural TEE studies to guide TEER and 50 standard of care non-procedural guidance TEE studies were analyzed. Mean duration of TEE procedure was significantly higher in the intraprocedural TEER group compared to the SOC TEE group (110.60 +/- 39.73 minutes vs. 23.76 +/- 12.01; p<0.0001), as were number of TEE clip images captured (214.42 +/- 90.47 vs. 74.02 +/- 25.99; p<0.0001), and number of 3-D TEE clip images performed (33.78 +/- 14.27 vs. 5.32 +/- 4.92; p<0.0001).

CONCLUSION

This is the first study documenting differences between intraprocedural Interventional Imaging TEE versus SOC TEE studies. Interventional Imaging physicians performing structural heart intraprocedural TEEs to guide TEER perform higher complexity studies that require significantly more time to complete, more images acquired, and more 3D imaging when compared to SOC TEE studies. This difference is not fully accounted for in current reimbursement codes. Larger studies are necessary to confirm these findings and clarify the needs of dedicated training programs for this unique skillset.