

Myriad Uses of Intraoperative Transesophageal Echocardiography

Shagun Sachdeva

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This issue of *Journal of Perioperative Echocardiography* consists of a myriad of cases highlighting the use of transesophageal echocardiography (TEE) in assessment of not only complex cardiac anatomy but also complex valvular function. Utilization of TEE in assessment of prosthetic/mechanical valves is increasing, especially when transthoracic echocardiography (TTE) is limited. The article on this highlights various causes of prosthetic valve dysfunction including calcification, tears, vegetations, and pannus formation, etc. Biplane mode assessment as well as advanced 3D echocardiography techniques are being increasingly utilized for complex valve functional assessment. The reason behind this is multifold. These advanced techniques not only aid in detailed anatomic assessment of valves from different aspects/angles including surgeon's view that are challenging with 2D echocardiography, but also assist in better quantitative (valve area, effective orifice area) and functional assessment (areas of regurgitation or obstructive flow) that is critical for adequate surgical planning. Intraoperative TEE is helpful also in assessment of anatomy, again when TTE imaging is limited especially in subcostal views in adults, that is useful for assessing some key structures. This detail is given in the article on use of TEE in detecting constrictive pericarditis or extent of pericardial effusion for appropriate drainage as well as abnormalities in left atrial appendage position. This is important information to have, given the need to screen these structures for hidden thrombi in at-risk patients as well as in patients undergoing ASD closure. This important use of perioperative TEE was again highlighted in the article where TEE was used to guide

Department of Pediatric Cardiology, Texas Children's Hospital, Baylor College of Medicine, Houston, Texas, USA

Corresponding Author: Shagun Sachdeva, Department of Pediatric Cardiology, Texas Children's Hospital, Baylor College of Medicine, Houston, Texas, USA, Phone: +1 832-826-5600, e-mail: shaguns@bcm.edu

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surgical intervention in a case with renal cell carcinoma with caval extension and gave the true extent of the tumor. However, perioperative imaging may be limited or misleading in some special circumstances. As in cases like the latter one, the branch pulmonary arteries especially mid and distal portions may be challenging to see and rule out pulmonary embolus. Aortic arch assessment is usually limited as well. Also as described in one of the articles, if the patient is being paced (especially ventricular pacing), this can affect atrioventricular synchrony and confound the assessment of ventricular function and atrioventricular valve regurgitation. Thus, cautious interpretation of the TEE findings is advised. Overall, we are seeing increasing use of perioperative TEE in guiding surgical management and assessing for residual lesions postoperatively. This is essential for appropriate patient management intra- as well as postoperatively.