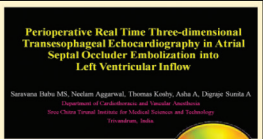


VIDEO COMMENTARY

IMPORTANCE OF 3D REAL TIME PERIOPERATIVE TEE IN ASD DEVICE EMBOLISATION

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Introduction:

Atrial septal defects (ASDs) constitutes 13% of all congenital heart diseases with a prevalence rate of 1.6 to 1.8 per 1000 live births. Percutaneous closure of ASDs has emerged as an alternate for surgical closure. Although there are five different types of ASDs (ostium primum, ostium secundum, sinus venosus defects, coronary sinus defects, and patent foramen ovale (PFO)), only ostium secundum and PFO are amenable to percutaneous device closure. The most frequent complication of the procedure is device embolization, with the reported incidence of 0.5-3%.

Pre-procedure assessment for ASD device closure

Pre-operative three dimensional (3D) transesophageal echocardiography (TEE) can help in patient selection and detect the potential risk factors for device embolization (*Video 1*)

Imaging through LA

A wide-angled electrocardiographic gated mid-esophageal 4-chamber full volume loop should be acquired over 4 beats with briefly held respiration at a frame rate of 20-25 Hertz. The displayed 3D image should be rotated and cropped to view the LV inflow through LA (enface view). The entanglement of the occluder on the chords of anterior mitral leaflet (AML) is seen in en face view. (*Video 2*)

Imaging through LV

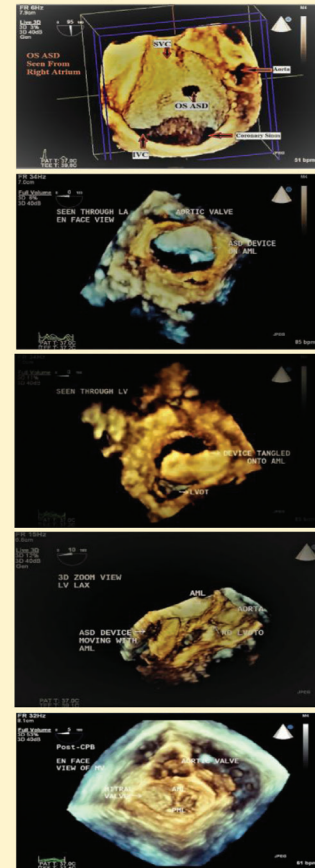
From the LA enface view, the image should be rotated upwards to 180° to rule out any LV inflow obstruction by cropping the image from LV side (*Video 3*)

3D Zoom View

To rule out any LV outflow obstruction, the real time 3D zoom view of LV long axis should be acquired by imaging the LV long axis in two orthogonal planes and cropping it after adjusting the gain settings to see the free movement of ASD device along with anterior mitral leaflet without any LV outflow obstruction (*Video 4*)

3D TEE after surgical retrieval of the device

Due to presence of ASD device in the LV inflow, there may be chances of injury to the mitral leaflets and chordae tendinae resulting in mitral regurgitation due to tear or prolapse or flail of mitral leaflets. So, after surgical retrieval of the device, a 3D en face view of the mitral valve should always be taken to confirm the absence of mitral leaflet injury and adequate closure of valve (*Video 5*)



Full Video Commentary is available at www.annals.in, Annals of Cardiac Anaesthesia APP, www.blog.annals.in

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