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**Role of Intracardiac Echocardiographic Guidance in Transcatheter Closure of Interatrial Communications.**

*Butnaru, A; Dratva, D; Balkin, J; Tzivoni, D; Meerkin, D*
*Shaare Zedek Medical Center, Jerusalem, Israel*

Percutaneous closure of secundum atrial septal defect (ASD) and patent foramen ovale (PFO), when indicated, is performed using a combination of fluoroscopic and echocardiographic guidance. Standardly, imaging of the interatrial septum and the closure device is achieved with transesophageal echocardiography (TEE). Due to the prolonged dwell time of the TEE probe and the necessity for the patients to remain still on their backs, the use of TEE for device closure requires general anesthesia. Intracardiac echocardiographic (ICE) guidance of septal defect closure has emerged as a technique that provides excellent imaging requiring only local anesthetic.

We analyzed 31 patients (11 with ASD and 20 with PFO associated with a stroke), 18 (58%) women, mean age 57.7±16.7 years, that underwent transcatheter closure using ICE guidance (AcuNav, Siemens). Cases where the pre-procedural TEE demonstrated an unstretched ASD diameter of >32mm were referred for closure with TEE control. The ASD 2-D size as measured by ICE ranged from 11 to 32mm. In all cases there was a <2mm discrepancy between the ICE and the angiographic size dimensions during balloon stretched sizing. ICE provided adequate views of the defects and surrounding structures and the various stages of device deployment. The unique views provided by ICE provided improved visualization of the left atrial side of the septum including outstanding delineation of all pulmonary veins, compared with our extensive experience with TEE. All patients had successful device placement. There were no complications related to the use of the AcuNav catheter.

We conclude that ICE is a safe and feasible method for guiding atrial septal closure procedures and provides unique images of atrial communications and left atrial structures further facilitating device closure in these cases. We believe ICE should replace TEE as an imaging guiding tool for most ASD and PFO device closure, eliminating the need for general anesthesia.