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### Title

The Use of Transcranial Doppler in the Detection of Right-to-Left Shunt in the Catheterization Laboratory

### Permalink

<https://escholarship.org/uc/item/0f10b0kk>

### Journal

JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY, 53(10)

### ISSN

0735-1097

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### Publication Date

2009

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Peer reviewed

2522-811**The Use of Transcranial Doppler in the Detection of Right-to-Left Shunt in the Catheterization Laboratory**

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The purpose of this study was to determine the sensitivity of different methods of detecting right-to-left shunts. Transesophageal echocardiography (TEE) has traditionally been the most reliable diagnostic technique for assessment of intracardiac shunts. Some patients with a high clinical suspicion for patent foramen ovale (PFO) have inconclusive studies, in part due to a lack of cooperation with the Valsalva maneuver from sedation. Twenty seven consecutive patients were brought to the cardiac catheterization laboratory for PFO closure where simultaneous transcranial Doppler (TCD) and intracardiac echocardiography (ICE) were performed. Right atrial pressures were measured at rest, with Valsalva and with forced exhalation into a manometer to 40mmHg. Prior to PFO closure, the average right atrial pressures were as shown in the table below.

Of the 27 patients who had their PFOs closed, 3 had false-negative TEE studies with positive TCD studies. TCD was also more sensitive than intracardiac echo for estimating the degree of shunt. This study confirms that inadequate intrathoracic pressures are frequently generated with a voluntary Valsalva maneuver, thus confirming a potential mechanism for false negative agitated saline transesophageal echocardiograms in the assessment of intracardiac shunts.

**Right Atrial Pressures**

RA Pressure at rest	RA Pressure with Valsalva	RA Pressure against manometer
6.6 ± 2.7 mm Hg.	22.2 ± 13.6 mmHg*	37.2 ± 6.8 mmHg*
	*compared to rest (p<0.001)	during Valsalva maneuver (p<0.001)