

Title	Intra-operative Transesophageal Echocardiographic Detection of Patent Foramen Ovale in the Cardiac Surgical Patient: why, when and its consequences.
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The incidence of patent foramen ovale (PFO) by autopsy studies is estimated to be 25% of the population. It has been associated with an increased lifetime risk of ischemic stroke and peri-operative hypoxemia, and embolism when right atrial pressures exceed left atrial pressures such as during positive pressure ventilation with PEEP or pulmonary embolism. Transesophageal echocardiography (TEE) is a standard tool to diagnose PFO and due to its widespread application during cardiac surgery, it has become important to routinely search for the existence of a PFO intra-operatively.

Methods: during one month a routine TEE evaluation was performed in all cardiac surgical patients, which included an examination for a PFO. Agitated saline was used as a contrast medium concurrently with an airway pressure at 20-cm H₂O end expiration.

Results: In 6 patients undergoing cardiac surgery a right-to-left shunt was demonstrated, including one suggestive anatomical defect consistent with an ASD. The scheduled surgical procedures were: 1 combined mitral and aortic valve replacement, 2 aortic valve replacements, 2 CABG's, and 1 redo CABG. In all cases, surgical exploration of the atrial septum was performed and 5 PFO's and 1 ASD were confirmed and surgically corrected.

Conclusion: our findings confirm the importance, not only of routine TEE examinations in all cardiac surgical patients including CABG patients, but also the routine evaluation for PFO and attempted demonstration of a right-to-left shunt as part of a complete TEE exam. If a positive finding is established a surgical correction is indicated.