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Congenital Cardiology Solutions

RESIDUAL SHUNT IN OPERATIVELY REPAIRED PATENT FORAMEN OVALE INCREASES PERIOPERATIVE MORBIDITY AND MORTALITY

ACC Moderated Poster Contributions

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Authors: *Ajinkya Rane, Kathryn Stackhouse, William Stewart, Gosta Pettersson, Eugene Blackstone, Richard Krasuski, The Cleveland Clinic, Cleveland, OH, USA*

Background: Recent studies have suggested that surgical repair of patent foramen ovale (PFO) is surprisingly common, but may be associated with increased perioperative stroke risk. The mechanism for the latter is unclear, but could be related to residual right to left shunting (RS) after surgery. We sought to define the prevalence of the latter and assess its impact on perioperative outcome.

Methods: From our cardiovascular surgery registry we identified 1,472 patients who underwent surgical repair of PFO between 1995 through 2009. 795 of these patients (54%) underwent repeat echocardiographic assessment for RS utilizing saline microbubbles and/or color Doppler within 30 days of surgery and perioperative outcomes were compared based on the presence of RS.

Results: Residual shunt was identified in 19% of the cohort. Patients with and without RS were similar with regard to baseline demographics (age, sex, cardiovascular risk factors, history of atrial fibrillation (17 % vs. 16 %, p=NS) and body mass index) and comorbidities including coronary disease, peripheral artery disease, chronic lung disease, renal disease and prior stroke or transient ischemic attack (15 % vs. 15 %, p=NS). Cardiopulmonary bypass times and the need for circulatory arrest were also similar between groups as were the post-operative tricuspid regurgitation velocities (2.7 m/s vs. 2.7 m/s, p=NS). Hospital and intensive care unit lengths of stay, however, were considerably longer in patients with RS, 17±20 vs. 13±15 days (p=0.005) and 5 ±10 vs. 4±7 (p=0.006) respectively. In-hospital stroke was significantly more likely in patients with RS (7.4 % vs. 3.6 %, p=0.04 with OR 2.2 and CI 1.04 to 4.6) as was post-operative mortality (4.7 % vs. 1.8 %, OR 3.16, 95 % CI, 1.2 to 8.5).

Conclusion: Residual shunt is common following surgical repair of PFO and is associated with increased lengths of stay and higher perioperative stroke and mortality risk.