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Congenital Heart Disease

THE INFLUENCE OF DEFICIENT RETRO-AORTIC RIM ON TECHNICAL SUCCESS AND EARLY ADVERSE EVENTS FOLLOWING DEVICE CLOSURE OF SECUNDUM ATRIAL SEPTAL DEFECTS: AN ANALYSIS OF THE IMPACT® REGISTRY

Oral Contributions

Room 31C

Sunday, March 15, 2015, 8:30 a.m.-8:42 a.m.

Session Title: Highlighted Original Research: Congenital Heart Disease and the Year in Review

Abstract Category: 12. Congenital Heart Disease: Therapy

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Background: Concern regarding aortic erosion has focused attention on deficient retro-aortic rim in patients undergoing device closure of atrial septal defects (ASD). However, whether retro-aortic rim size is a risk factor for technical failure and early adverse outcomes has not been delineated.

Methods: A multi-center retrospective cohort study of children and adults undergoing cardiac catheterization for device occlusion of ASD between 1/2011-4/2014 was performed, using data from the IMPACT® (Improving Pediatric and Adult Congenital Treatment) Registry. Subjects with reported retro-aortic rim were divided between those with rim <5 and >5 mm. The two primary outcomes were technical failure and composite of all major early adverse events. Secondary outcomes were surrogates of technical complexity including total case time, total sheath time, and fluoroscopy time. The effect of deficient retro-aortic rim on risk of technical failure and early adverse outcome was assessed using hierarchical logistic regression, adjusting for subject age, height, sex, ASD diameter, balloon sizing technique, and device type.

Results: 1,230 subjects (from 72 centers) in whom retro-aortic rim size was recorded underwent attempted device closure during the study period, of which 43% had deficient retro-aortic rim. Technical failure occurred in 73 subjects (5.9%) and a major early adverse event in 65 subjects (5.3%). In multivariate models, the presence of a deficient retro-aortic rim was not significantly associated with either technical failure (OR: 1.5, 95% CI: 0.92-2.44, p=0.11) or major early adverse event (OR: 0.77, 95% CI: 0.45-1.32, p=0.34). In multivariate models, total case time (p=0.01) and fluoroscopy time (p=0.02) were greater in subjects with deficient retro-aortic rim, but sheath time was not significantly different (p=0.07).

Conclusion: Deficient retro-aortic rim is highly prevalent in patients presenting for device closure of secundum atrial septal defects. These defects may be technically more challenging to treat, but deficient retro-aortic rim was not associated with risk of technical failure or early adverse outcomes. Effects on longer-term outcomes require further study.