Safety and Feasibility of Same Day Discharge Using the Vancouver PFO/ASD Clinical Pathway

Madeleine Barker,1 Janarthanan Sathananthan,2 Jacqueline Saw,1 Sandra Lauck,2 Philip Teal,3 Peter Fahmy,5 Thomas Gilhofer,3 Ashkan Parsa,1 Ali Alsulaimi,1 Mark Hensey,2 Abdullah Alkhodair,6 Uri Landes,6 John Webb,2 David Wood7

1University of Toronto, Toronto, Ontario, Canada; 2St. Paul’s, Vancouver, British Columbia, Canada; 3Vancouver General Hospital, Vancouver, British Columbia, Canada; 4University of British Columbia, Vancouver, British Columbia, Canada; 5Blacktown and Westmead Public Hospital, Westmead, Australia; 6Centre for Heart Valve Innovation, St. Paul’s Hospital, Vancouver, British Columbia, Canada; 7Centre for Heart Valve Innovation, St. Paul’s and Vancouver General Hospitals, Vancouver, British Columbia, Canada

BACKGROUND Although rates of atrial septal defect (ASD) closure are stable, dramatic increases in the rates of patent foramen ovale (PFO) closure have placed greater demands on existing catheterization laboratory resources. The Vancouver PFO/ASD Clinical Pathway (Figure 1) was designed to facilitate same-day discharge. The goal of this prospective case series was to demonstrate the safety and feasibility of the pathway.

METHODS All patients who underwent elective percutaneous closure at a single center were included.

RESULTS Between May 2010 and April 2019, 187 sequential patients underwent PFO (n = 117 [63%]) or ASD (n = 70 [37%]) closure with defects measuring between 5 and 35 mm using the Vancouver PFO/ASD Clinical Pathway (Figure). Procedural success was achieved in 99.5% of cases. Mean procedure time (52.8 to 41.4 min; p < 0.001), fluoroscopy time (15.0 to 9.6 min; p < 0.001), and contrast dose (51 to 35 ml; p < 0.001) all decreased from the initial to the latter half of cases. Device embolization requiring redeployment occurred in 2 patients with ASD closure. Same-day discharge home was achieved in 99.4% of elective cases (n = 176). There were no vascular complications, pericardial effusions, or 30-day readmissions. Transesophageal echocardiography at 6 months demonstrated no residual shunt in 96% of patients. The incidence of post-procedural paroxysmal atrial fibrillation was 3.2%.

CONCLUSION Same-day discharge after percutaneous closure is both safe and feasible when using the Vancouver PFO/ASD Clinical Pathway. Given the potential for improved patient experience and resource use, a prospective multicenter study is needed.

CATEGORIES STRUCTURAL: Congenital and Other Structural Heart Disease