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Journal

JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY, 61(10)

ISSN

0735-1097

Authors

Mojadidi, M Khalid
Gevorgyan, Rubine
Tobis, Jonathan

Publication Date

2013

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Peer reviewed

TCT@ACC-i2: Invasive and Interventional Cardiology

THE EFFECT OF PATENT FORAMEN OVALE CLOSURE IN PATIENTS WITH ORTHODEOXIA-PLATYPNEA SYNDROME

Poster Contributions

Poster Sessions, Expo North

Monday, March 11, 2013, 9:45 a.m.-10:30 a.m.

Session Title: Structural Heart Disease Intervention

Abstract Category: 51. TCT@ACC-i2: Non-valvular Structural Heart Disease

Presentation Number: 2114-251

Authors: *M. Khalid Mojadidi, Rubine Gevorgyan, Jonathan Tobis, UCLA School of Medicine, Los Angeles, CA, USA, Albert Einstein College of Medicine, Jacobi Medical Center, Bronx, NY, USA*

Background: Orthodeoxia-Platypnea Syndrome (OPS) is a rare condition characterized by arterial desaturation and dyspnea in an upright posture that is improved in the recumbent position. It is associated with right-to-left shunting (RLS), usually at the level of the foramen ovale in the atrial septum. The goal of this study was to describe the outcome of patent foramen ovale (PFO) closure in patients with OPS.

Methods: Patients with OPS and RLS who elected to have their PFO closed were assessed for the severity of their symptoms and interval SaO₂ changes. Following PFO closure, patients were classified according to the outcome of SaO₂ as “Resolved,” “Improved” or “No change”.

Results: Of 683 subjects with PFO-associated conditions referred to UCLA from 2001 to 2012, 17 had OPS and elected to have their PFO closed. Approximately 1/3 of these patients experienced complete resolution of their dyspnea and arterial desaturation, and required no oxygen use (Δ SaO₂ >10% when recumbent and >20% on postural challenge; p=0.02; p=0.0003). Another third experienced significant improvement in dyspnea, with baseline O₂ over 93% with less decrease in arterial saturation on postural challenge than before closure. This group continued using oxygen with Δ SaO₂ >4% when recumbent and >11% on postural challenge, p=0.02; p=0.12). Those patients who experienced no change after PFO closure predominantly had a pulmonary etiology for hypoxemia and dyspnea at the time of the referral, with elevated mean pulmonary pressure measured before closing the PFO (51.4± 16.8 mm Hg, p=0.06).

Conclusions: PFO closure is an effective method for treating patients with orthodeoxia-platypnea who do not have pulmonary insufficiency as the primary cause of their hypoxemia. Pulmonary hypertension is associated with a poor outcome after PFO closure in this patient population.