D-Transposition of Great Arteries (d-TGA) is a congenital cardiac anomaly where the aorta and pulmonary artery (PA) are transposed, with the left ventricle (LV) supplying the pulmonary circulation and the right ventricle (RV) supplying the systemic circulation. The Mustard procedure, an atrial level switch involving resection of the atrial septum and placement of a pericardial baffle, was used to divert deoxygenated blood to the left atrium (LA) and oxygenated blood to the right atrium (RA). We present a case of an adult with d-TGA corrected with a Mustard procedure requiring PA banding in preparation for an arterial switch procedure.

A 24 year-old female born with d-TGA, treated with balloon atrial septostomy and Mustard procedure as a neonate, presenting for PA banding. Work-up revealed cardiac anatomy consistent with d-TGA. The RV was enlarged with severe hypertrophy, reduced systolic function, and hypokinesis of the RV apex. The LV was small and thin walled, with normal systolic function. Flattening of the intraventricular septum (IVS) with abnormal motion was noted and an atrial baffle was present with no evidence of leak.

General anesthesia was induced with following a right radial arterial line. A right internal jugular sheath introducer with Swan-Ganz catheter floated into the LV and transesophageal echocardiography (TEE) were also placed.

Sternotomy was performed and a 1cm silastic band was placed around the main PA and tightened, while systemic pressures, LV pressures, and TEE were monitored. Dobutamine and norepinephrine infusions were titrated to maintain adequate cardiac output and systemic pressures during banding. Near mean systemic pressures were produced with banding, however the hemodynamic performance was compromised. The band was loosened to achieve 2/3 mean systemic pressures, while patient remained stable. The chest was closed and the patient was taken to intensive care.

PA banding is used as a method to retrain the LV prior to an arterial switch in patient with TGA beyond the neonatal period or in patients who have had an atrial level switch previously. There are various criteria that determine the amount of banding at operation, however it is crucial that a balance between banding and cardiovascular stability be maintained. TEE allows us to assess the changes in IVS geometry, LV performance, and pressure gradients during banding. PA banding causes a fixed increase in pulmonary vascular resistance, thus intraoperative interventions may be required to increase inotropy, heart rate and systemic pressures.

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NOTE SEPTAL FLATTENING

NOTE THE SHIFTING OF SEPTUM