TRANSCATHETER PLUG TO SEAL DELAYED POST-SURGICAL LARGE LVOT PERFORATION CAUSING SEVERE MR IN A PATIENT WITH ADULT CONGENITAL HEART DISEASE

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History and physical

We present a 49-year-old gentleman, full time detective with HT, congenital heart disease with VSD, bicuspid aortic valve and CoA s/p SAVR x 3; aortic valve repair followed by SAVR(mechanical), redo SAVR(mechanical), followed by redo SAVR(21 mm Medtronic freestyle valve root with a 22 Hemashield graft), suture repair of mitral annulus, VSD patch closure, partial DaVega suture annuloplasty of the TV and CoA repair with permanent pacemaker for complete heart block. He now presented with progressive SOB in NYHA class III with severe MR from LVOT perforation. On examination, he had stable vitals, with soft S1, 3/6 PSM heard best in the left mid sternal border with LV S3, minimal bibasal crepitations with no significant radio-femoral delay or upper/lower BP difference.

Imaging

Transthoracic echo showed severe MR with PA pressure of 64 mm Hg and EF of 45%. TEE showed LVOT perforation as the cause of the dominant MR jet through it. CT Heart showed a relatively large elliptical defect measuring 4.5 mm with calcific edges and a rim of 6.1 mm towards the aortic annulus. On cath, PA pressure measured 65/28/41 mm Hg and LVEDP 25 mm Hg.

Indication of intervention

Symptomatic severe MR with moderate to severe MR from LVOT perforation

Intervention

Right CFA and left CFV accessed using USG guidance. A 6 Fr JL5 guide was advanced in the LVOT, defect crossed with 0.014 fielder wire and exchanged with 0.035 Wholey wire through quick cross catheter. A 4 Fr Ansel sheath was then carefully advanced through the defect and a 6 x 4 ADO II was positioned such that the distal disc was in the LA and the body and proximal disc was in the LVOT. There was no impingement on the aortic or the mitral valve with significant reduction of 'v' waves from 45 to 21 mm Hg, residual trivial to mild MR and immediate drop in PA pressures from 65 to 35 mm Hg.

Learning points of the procedure

Delayed post-operative LVOT to LA defect with severe MR can be safely closed with an ADO II device with proper planning.