CONGENITAL CONDITIONS

Valve versus stent for RVOT obstruction

Percutaneous pulmonary valve implantation (PPVI) is superior to bare metal stenting (BMS) for the treatment of right ventricular outflow tract (RVOT) obstruction in patients with congenital heart disease.

Complex congenital heart disease often requires creation of an artificial connection between the right ventricle and the pulmonary artery through surgical implantation of a conduit. However, obstruction or degeneration of the conduit inevitably develops and most patients require multiple open-heart operations during their lifetime. BMS helps to prolong the life of the conduit and, therefore, delay the need for surgery. A potential problem with this procedure is pulmonary regurgitation but the consequences of this effect have never been assessed. PPVI, which does not cause pulmonary regurgitation, might be a preferable alternative to BMS.

Researchers at the Great Ormond Street Hospital for Children, UK, assessed hemodynamics and ventricular function in 14 children, each treated with both PPVI and BMS in a two-staged, sequential procedure. Both procedures reduced right ventricular pressure; however, improvements in ventricular effective stroke volume and efficiency were seen after PPVI but not with BMS. "Although this study describes the response to BMS and PPVI only in the acute setting and mid or long-term comparison is still missing, we believe that PPVI does represent the gold-standard for the nonsurgical treatment of conduit dysfunction," says researcher Philipp Lurz.

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Original article Lurz, P. *et al.* Comparison of bare metal stenting and percutaneous pulmonary valve implantation for treatment of right ventricular outflow tract obstruction: use of an X-ray/magnetic resonance hybrid laboratory for acute physiological assessment. *Circulation* **119**, 2995–3001 (2009).