Management of coexistent multi-valvular prosthetic dysfunction: a unique approach

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A 28-year-old woman underwent bioprosthetic tricuspid valve replacement (TVR) and mitral valve repair for congenital tricuspid valve dysplasia. Two months later she developed Staphylococcus aureus endocarditis and underwent mitral valve replacement and redo-TVr, with a complicated postoperative course.

Prosthetic tricuspid valve leaflet thickening with failure of coaptation and torrential regurgitation was noted at 2 year follow-up. There was also marked thickening of the mitral valve prosthetic cusps with failure of leaflet opening (*), resulting in moderate stenosis (Panels A–C, Supplementary material online, Video 1) and mild regurgitation. Inflammatory markers and multiple blood cultures were negative. Her risk for re-operation was felt to be prohibitive and consideration of cardiac transplantation was recommended.

We opted instead for a dual approach: warfarin anticoagulation for suspected mitral prosthetic valve thrombosis, followed by valve-in-valve implantation for degenerated tricuspid bioprosthesis. Transesophageal echocardiography performed after 6 weeks anticoagulation demonstrated a marked resolution of mitral bioprosthetic thrombosis with normal mobility of all cusps, and a normal gradient (Panels D–F, Supplementary material online, Video 2). A Melody valve was implanted percutaneously to address the tricuspid regurgitation (Panels G–I, Supplementary material online, Video 3).

This case demonstrates the unique challenges in diagnosis and management of dual pathology with mitral bioprosthesis thrombosis and tricuspid bioprosthetic degeneration. While bioprosthetic valve thrombosis is a rare complication typically occurring early after implantation, it may occur late after surgical implantation and mimic recurrent endocarditis. A high index of suspicion for prosthetic valve thrombosis is necessary to avoid inappropriate therapy including antibiotics and re-do surgery. Early identification and management of such patients with anticoagulation can result in excellent outcomes.

Supplementary material is available at European Heart Journal online.

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