Tricuspid valve-in-valve implantation: the transjugular approach†

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In a recent issue of the Journal, Gaia et al. [1] described a patient treated by transcatheter valve-in-valve implantation of a balloon-expandable inovare transcatheter bioprosthesis valve (Braile Biomedical, Brazil) in the tricuspid position. The authors reported that due to alignment difficulties, alternative approaches were not suitable for the tricuspid intervention and the procedure was performed via the open transatrial route, as previously reported by Hon et al. [2].

As underscored by Dr Gaia, patients requiring surgery for the degeneration of a tricuspid bioprosthesis are extremely diseased and fragile. They often undergo more than one operation, resulting in the development of tenacious pleuro-pericardial adhesions, and may display various degrees of hepatic failure with a significant impairment of the platelet function and coagulation. For all these reasons, avoiding cardiopulmonary bypass may be extremely beneficial in this setting. However, re-entering the chest and dissecting the pleuro-pericardial adhesions through a thoracotomy carries a significant risk of damaging the lung and the cardiac structures, and may cause exposure to complications (pneumothorax, subcutaneous emphysema, recurrent pleural effusion) that are easily handled in routine cases, but may be poorly tolerated by these fragile patients.

The transjugular approach may represent a less invasive alternative route for tricuspid valve-in-valve implantation in failing tricuspid bioprostheses. We have previously reported a successful transjugular tricuspid procedure performed in a 71-year old lady at the ‘G. Pasquiniucci’ Heart Hospital in Massa, Italy [3]. Van Garsse et al. [4] successfully treated a fragile 74-year old woman with chronic obstructive pulmonary disease, impaired renal function and cardiac hepatic cirrhosis with a similar approach. Finally, the same procedure was successfully performed in a 61-year old female patient at the San Giovanni Battista Hospital ‘Molinette’ in Turin, Italy. The patient presented with severe stenosis of a 29-mm Carpentier Edwards Perimount Plus implanted 10 years before via a right thoracotomy. She was heavily symptomatic for dyspnea, and a decision to adopt the transcatheter approach was made because immediately after the previous intervention she suffered from a dramatic post-pericardiotomy syndrome requiring several hospitalizations and a 2-year high-dose steroid therapy. The procedure was performed in the catheterization laboratory. The jugular vein was isolated with a small incision. An extra-stiff wire was positioned in the right pulmonary artery, and a 26 French transapical sheath was advanced on it. A 29-mm Sapien XT valve was then easily positioned through the malfunctioning bioprosthesis, and deployed during rapid ventricular pacing.

In our opinion, the transjugular approach could offer several advantages over the direct transatrial route: it allows the avoidance of re-opening the chest and dissecting the pleuro-pericardial adhesions, which could be helpful in these severely diseased patients. Furthermore, having a relatively long wire fixed in the pulmonary artery might help in the delicate process of orientating the transcatheter prosthesis and stabilizing it in its final position during the balloon inflation. In conclusion, we share the authors’ opinion that the transcatheter valve-in-valve replacement of a failing tricuspid bioprosthesis represents an excellent option in selected patients, and we would strongly encourage considering the transjugular approach as the preferred one, since it is feasible, safe and relatively easy, as demonstrated by our and other experiences.

REFERENCES


†The corresponding author of the original article [1] was invited to reply, but did not respond.