Transcatheter closure of paravalvular leak secondary to left ventricular peri-annular pseudoaneurysm

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Left ventricular (LV) pseudoaneurysm is a clinically rare condition, often difficult to diagnose; one-third of the occurrences result from a surgical procedure, mostly mitral valve replacement (MVR). The detailed anatomy of sac and its communication can be delineated with a transoesophageal echocardiogram (TOE), cardiac MRI, or contrast CT scan.

We report a case of a 77-year-old woman, who underwent an MVR with a mechanical prosthesis. After 3 years, she developed infective endocarditis. A TOE showed a wide postero medial paravalvular leak, determining a severe regurgitant jet into the left atrium (LA) (Panel A); furthermore an LV recess was detected just below the origin of the jet confirmed by a contrast CT-scan (Panel C, arrow). The rupture was located in the posterior atrio-ventricular groove, creating a LV pseudoaneurysm communicating with the LA (Panel D, arrow). Because of a high surgical risk, a transcatheter closure of the defect was planned. The leakage was crossed with a retrograde approach. The Mullins catheter was advanced in the LV and an extra-stIFF Amplatz wire was placed in the apex for positioning the 9F guiding catheter (Panel D), used for the implantation of an AMPLATZER TM Duct Occluder 10/12 mm (S Jude, Inc., USA) (Panel E). Finally, successful leak closure of the defect was achieved (Panel F, asterisk). The patient was discharged after 5 days.

A catheter-based closure approach for a paravalvular leak and LV pseudoaneurysm has been described before. We report an uncommon case of transcatheter treatment of an LV peri-annular pseudoaneurysm ruptured in the LA, in a patient with a previous MVR and endocarditis.

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