

Severe mitral regurgitation recurrence after successful percutaneous mitral edge-to-edge repair by Mitraclip: Insights from a three-dimensional echocardiography study

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Abstract

Background: The sustainability of the results of mitraclip procedures is a source of concern. Aims: To investigate risk factors of severe mitral regurgitation (MR) recurrence after Mitraclip in primary MR. Methods and results: Eighty-three patients undergoing successful Mitraclip procedures were retrospectively included. Valve anatomy and Mitraclips placement were comprehensively analyzed by post-processing 3D echocardiographic acquisition. The primary composite endpoint was the recurrence of severe MR. Mean age was 83 ± 7 years-old, 37 (44%) were female. Median follow-up was 381 days (IQR 195-717) and 17 (20%) patients reached the primary endpoint. Main causes of recurrence of severe MR were relapse of a prolapse (64%) and single leaflet detachment (23%). Posterior coaptation line length (HR 1.06 95%CI 1.01-1.12 $p=0.02$), poor imaging quality (HR 3.84, 95%CI 1.12-13.19; $p=0.03$), and inter-clip distance (HR 1.60, 95%CI 1.27-2.02; $p<0.01$) were associated with the occurrence of the primary endpoint. Conclusions: Recurrence of severe MR after a MitraClip procedure for primary MR is common and results from a complex interplay between anatomical (tissue excess) and procedural criteria (quality of ultrasound guidance and MitraClips spacing).

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