A Mitraclip affaire: early detachment and iatrogenic interatrial defect

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A 65-year-old Caucasian man was admitted at our Department for screening of Heart transplantation. Few months before the referral, he underwent four MitraClip devices implantation for severe mitral regurgitation (MR) in another hospital. A transthoracic echocardiography was performed showing a dilated and hypokinetic left ventricle (ejection fraction \( \approx 22\% \)) and a mild to moderate mitral stenosis (mean gradient 5 mmHg) (Panels A and B, Supplementary data online, Movie S1); in the region of the septum secundum, near the fossa ovalis, a moderate left-to-right shunt (Qp/Qs 1.5) was clearly identifiable due to post-procedure interatrial septal defect (Panel C). Moreover, a severe residual MR with an eccentric jet directed towards the lateral region of the left atrium was showed by echocardiography (Panel D, Supplementary data online, Movie S2).

To understand better the physiopathology of the MR, a three-dimensional real-time transthoracic echocardiography was performed. The three-dimensional views allowed a realistic evaluation of the Mitraclip devices: three mitraclips were correctly anchored to their site (from the scallops A2P2 to the scallops A3P3), while the fourth Mitraclip was anchored only to the anterior leaflet of the valve (scallop A1) and it was detached from the posterior one (scallop P1) (Panel E, Supplementary data online, Movie S3). The patient was treated with inotropes and high dose diuretics and scheduled for heart transplantation.

(A) Transthoracic echocardiography: short axis showing the mitral valve anatomic area (two small orifices); (B) transthoracic echocardiography: continuous wave Doppler of the transmitial flow; (C) transthoracic echocardiography: apical four chamber view showing a moderate left-to-right shunt in the region of the septum secundum; (D) transthoracic echocardiography: apical four chamber view showing a severe mitral regurgitation; (E) three-dimensional echocardiography, off-line reconstruction showing three Mitraclip devices correctly anchored to the mitral valve leaflet, while the fourth was detached from the posterior one.

Supplementary data are available at European Heart Journal – Cardiovascular Imaging online.

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