Immediate reduction of mitral regurgitation by percutaneous mitral valve repair with the MitraClip®

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A 78-year-old male presented with shortness of breath due to severe mitral regurgitation. His medical history revealed terminal renal failure for which he received haemodialysis. Two months before admission he had been seen for an acute coronary syndrome, for which he was treated with a percutaneous coronary intervention including rotablator of the left anterior descending and left circumflex arteries. Echocardiography showed an impaired left ventricular function and a severe ischaemic mitral regurgitation with a posterior jet. He was denied surgery of the mitral valve because of his high surgical risk (logistic EuroSCORE: 21%), and accepted for percutaneous mitral valve repair using the MitraClip®. At this moment in Europe the MitraClip® is considered a useful technique for high-risk and inoperable patients, in contrast with the low-risk patients treated in the EVEREST trial.¹

In the catheterisation laboratory the MitraClip® device was delivered to the mitral valve through a transseptal approach. The procedure was performed under fluoroscopic and two-dimensional transoesophageal echocardiographic (TEE) guidance. With TEE, mainly three-chamber (120°), two-chamber (46°) and transgastric short-axis

views were used to guide the clip towards its proper position, where 3D TEE may simplify the procedure. Next, the clip was advanced into the left ventricle, after which the leaflets were grasped; then the clip was closed and released from the delivery catheter. The clip implantation resulted in a dramatic reduction in the mitral regurgitation from severe to mild. The reduction in mitral regurgitation was especially seen after closure of the clip arms (figure 1). ■

Figure 1. Intercommissural (two-chamber) transoesophageal and fluoroscopic views during closure of the MitraClip around the grasped mitral valve leaflets. Note the difference of the mitral regurgitation jet between before (A) and after (B) closure of the clip arms.

Reference

- 1 Feldman T, Kar S, Rinaldi M, et al. Percutaneous mitral repair with the MitraClip system: safety and midterm durability in the initial EVEREST (Endovascular Valve Edge-to-Edge REpair Study) cohort. *J Am Coll Cardiol.* 2009;18;54:686-94.

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