Combined MitraClip® implantation and left atrial appendage occlusion using the Watchman™ device

Implante combinado de MitraClip® e oclusão do apêndice atrial esquerdo usando o dispositivo Watchman™

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AE: left atrium; VE: left ventricle.

Figure 1. Final result. (A) Fluoroscopy showing the Watchman™ device (above) and the two clips (below). (B) Final mitral insufficiency on echocardiography.

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Transcatheter mitral valve repair (TMVR) using the MitraClip® system is an emerging approach to treat selected cases of degenerative and functional mitral regurgitation (MR).¹ Patients referred for MitraClip® implantation often have concomitant atrial fibrillation (AF), in addition to a frailty profile that represents an increased risk of thromboembolic and hemorrhagic events.² Occlusion of the left atrial appendage (LAA) is currently considered an alternative for oral anticoagulation in patients with non-valvular AF.

We describe here a combined implantation using the MitraClip® system and the Watchman™ device for the treatment of primary MR and LAA occlusion. A 77-year-old female patient with history of breast cancer treated with surgery and radiation therapy, previous thromboembolism, permanent atrial fibrillation treated with oral anticoagulant (OAC) (edoxaban), presented with an important MR due to myxomatous degeneration and angiodysplasia of the colon, with several episodes of intestinal bleeding.

She was admitted due to a new intestinal bleeding with acute anemia requiring blood transfusion, associated with a decompensated clinical MR. TMVR and LAA occlusion were indicated after a transesophageal echocardiography revealed an ejection fraction of 60%, a left atrium measuring 47mm, a left ventricular end-diastolic diameter measuring 50mm, a preserved mitral valve opening, and an important insufficiency with two eccentric jets, the largest directed to the interatrial septum, and the image of a ruptured posterior leaflet chord causing failure of coaptation (flail), with

a posterior leaflet measuring 17mm, a mitral valve area of 4.8cm², a flail gap of 2mm, moderate pulmonary hypertension (50mmHg), and a tricuspid valve with mild to moderate regurgitation. The LAA measurements proved to be adequate for the implantation of the Watchman™ device.

The procedure was initiated with an RTVM using the MitraClip® (24F) system. The transseptal puncture was performed in an upper and posterior position, at a height of 4cm above the valve plane. An effective reduction in MR was achieved with the use of two clips (XTR, in the medial “A2” position, and NTR, in the lateral “A2” position), with a slight insufficiency and a mean gradient of 3.8mmHg at the end (Figure 1B). The MitraClip® delivery system was removed, and an 18F introducer was used to prevent bleeding from the access site for the LAA occlusion procedure, which uses a 14F introducer set. A 24mm prosthesis (maximum LAA diameter of 20mm) was chosen, using the same puncture. However, after several attempts, the positioning of the prosthesis remained inappropriate, due to the anatomical configuration of the appendage, whose main lobe was in a much higher position. We opted for a new puncture, now in an ideal position for the occlusion (inferior and posterior), and then achieved a proper position for the deployment of the device, after confirming the adequate positioning, compression and absence of residual flow through the prosthesis (Figure 1A). The patient had a favorable clinical progression, and was discharged 72 hours after the procedure.

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None.

DECLARATION OF CONFLICTS OF INTEREST

The authors declare there are no conflicts of interest.

CONTRIBUTION OF AUTHORS

Conception and design of the study: MT, VE and MHO; data collection: MT, VE and MHO; data interpretation: MT, VE and MHO; text writing: MT, VE and MHO; approval of the final version to be published: MT, VE and MHO.

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