

# TOOLBOX - SIMULTANEOUS DOUBLE TRANSSEPTAL ACCESS FOR CARDIOBAND-/AND MITRACLIP IMPLANTATION FOR TREATMENT OF SEVERE FUNCTIONAL MITRAL REGURGITATION

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## HISTORY AND PHYSICAL

A 76-year-old male patient presented with dyspnea (NYHA III) caused by severe (4+) functional mitral regurgitation (FMR).

## IMAGING

TEE investigation revealed very severe FMR with a coaptation depth of 14 mm and a posterior mitral leaflet angle of 55.2° with a broad vena contracta (see moving images).

## INDICATION FOR INTERVENTION

Interventional mitral valve edge-to-edge reconstruction has gained widespread acceptance as a therapy option for patients with mitral regurgitation at high surgical risk. However, surgical reconstruction is the gold standard mainly because it combines different surgical methods depended on the patient's individual pathology to acquire perfect results, i.e. annuloplasty, chordae replacement and surgical leaflet reconstruction. During the last two years interventional mitral annuloplasty has gained widespread acceptance in Europe and expert panels predicted the future of interventional mitral valve therapy as a toolbox of devices that can be combined according to the individual patient pathology – mimicking surgical therapy. Due to an increased surgical risk (logEuroSCORE-I: 24.6%; left ventricular ejection fraction: 27%, pulmonary hypertension and chronic kidney failure) in this described patient the heart-team recommended an interventional annuloplasty by Cardioband (Valtech Cardio, Or Yehuda, Israel) and suggested a standby for MitraClip (Abbott, Illinois, USA) treatment.

## INTERVENTION

Baseline hemodynamics: left atrial pressure (LAP) 19 (v-wave: 41) mmHg, pulmonary artery pressure (PAP) 55/19/30 mmHg, cardiac output (CO by thermo dilution) 2.9 L/min. A Cardioband (Size F, 17 anchors) was implanted and cinched to 5.5 resulting in reduction of the anterior-posterior (3.5 to 2.8 cm) and septal-lateral (4.1 to 3.1 cm) dimension. Despite a FMR reduction to II+ and a decrease of LAP to 14 (v-wave: 28) mmHg (see moving images), a second transseptal access was obtained for simultaneous MitraClip treatment. For better visualization of the PML (90° tethering after Cardioband) cinching was reduced to 4.5. MitraClip closure completely eliminated the FMR without any need for further Cardioband recinching (see moving images). Final hemodynamics: LAP 11 mmHg (v-wave: 18 mmHg, PAP 53/15/30 mmHg, CO 4,5 L/min). The double guide approach resulted in no relevant septal defect.

## LEARNING POINTS OF THE PROCEDURE

Here we present the first description of a simultaneous Cardioband-/and MitraClip implantation in a single treatment setting for functional mitral regurgitation in a patient not eligible for surgery due to

high surgical risk. The combined approach of two devices that were simultaneously adapted resulted in an interventionally reconstructed, competent mitral valve and is a perfect description of utilizing a toolbox for treatment of severe FMR.