MEMO 4D®
Physiological mitral annular dynamics preserved after ring annuloplasty in mid-term period


Physiological mitral annular dynamics preserved after ring annuloplasty in mid-term period

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CENTRAL MESSAGE
MEMO 3D was able to preserve folding annular dynamics at mid-term follow-up.

STUDY OUTLINE
- Mitral annular dynamics investigation after implantation of:
  - Rigid Saddle Ring-RSR
  - Physio II
  - MEMO 3D
- Post-operative mid-term evaluation of the annular dynamics with ECG-gated 3D computed tomography (3D-CT)

PATIENTS CHARACTERISTICS AND SURGICAL DETAILS
- 31 patients with severe mitral regurgitation (Carpentier’s type II)
- Annuloplasty rings used and mean age:
  - 15 patients with MEMO 3D (62.6 ± 11.0 yrs)
  - 12 patients with Physio II (61.3 ± 7.6 yrs)
  - 8 patients with RSR (58.8 ± 8.8 yrs)
- Mitral valve repair:
  - Artificial chordate implantation: 7
  - Triangular or quadrangular resection: 2
**KEY TAKE-AWAYS**

- The increase in the postoperative AHCWR from end-diastole to end-systole was significantly larger in the MEMO 3D than in the Physio II and RSR.
- MEMO 3D can preserve physiological annular dynamics in mid-term period, while Physio II and RSR restored the physiological 3D annular shape.
- MEMO 3D is a semi-flexible ring that accommodates the mitral annulus to 3D motion and immediately preserves its folding dynamics.

**CONCLUSION**

“The Physio II and Rigid Saddle Ring can restore the physiological, three dimensional, annular shape at the mid-term postoperative period, although the physiological annular dynamics was completely disappeared. The MEMO 3D preserves annular dynamics and folding dynamics in the mid-term period postoperatively.”

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**RESULTS**

- All 3 groups had similar characteristics (mean age, preoperative echo values, size of the implanted annuloplasty ring).
- Physio II and RSR maintained normal mid-term AHCWR values (20.4 ± 1.7 and 21.3 ± 1.7%, respectively).
- MEMO 3D had a significantly smaller AHCWR (10.8 ± 3.1%) compared with the other rings.
- MEMO 3D had a significantly larger increase in the rate of the AHCWR compared with that in the other groups.

**IMAGE ACQUISITION**

- Postoperative 3D-CT performed at a mean of 3.6 ± 1.6 years after the operation.
- Description of the annuloplasty ring in lateral and frontal view.
- Evaluation of:
  - Rate of reduction in the AP and CC diameters.
  - Rate of increase in the AHCWR from end-diastole to end-systole.