MEMO 4D®
Annular dynamics of MEMO 3D® annuloplasty ring evaluated by 3D transesophageal echocardiography


CENTRAL MESSAGE

The use of real-time 3D echocardiography demonstrated that MEMO 3D allows for a saddle-shaped configuration whilst stabilizing the mitral annulus.

STUDY OUTLINE

- One of the first studies to fully assess changes of the mitral annulus before and after MV repair using a MEMO 3D through transesophageal full-volume real-time 3D echocardiography
- 17 patients with mitral valve reconstruction operated either in full sternotomy or righ mini-thoracotomy

PATIENTS CHARACTERISTICS AND SURGICAL DETAILS

- Mean age: 60.4 ± 14.9 yrs, 71% male
- Mitral valve repair:
  - Resection and suture technique (excessive leaflet causing regurgitation): 10
  - Chordal replacement using loop technique: 7
- Concomitant procedures (MAZE, CABG, Tricuspid annuloplasty): 4
- Mean annuloplasty ring size: 28.9 ± 2.1 mm
KEY TAKE-AWAYS

- The mitral annular area, the circumference length and diameter changed during the cardiac cycle
- The Memo 3D ring maintained a physiological saddle-shape configuration throughout the cardiac cycle
- Real-time three-dimensional echocardiography analysis confirmed the motion and flexibility of the Memo 3D ring upon implantation
- The MEMO 3D annular dynamics throughout the cardiac cycle closely mimic the normal mitral valve motion described in normal subjects

CONCLUSION

"In this study, the Memo 3D ring demonstrates a saddle-shape configuration throughout the cardiac cycle despite its planar shape before implantation, which showed its shape to the physiologic dynamism of the mitral annulus. Real-time three-dimensional echocardiography analysis using various analysis software programs was useful to show detailed motion and flexibility of the mitral prosthetic ring upon implantation."

Figure 1.
Changes in annular height throughout the cardiac cycle.