

Pre-Measured Artificial Chordae for Mitral Valve Repair

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Background: There are several techniques for the application of artificial chordae for mitral valve repair. The major challenges with the artificial chordae are to determine the correct chordal length and to fix the chordae to the papillary muscle and leaflet while sustaining the correct chordal length. We present our early clinical experience in mitral valve repair using the Leipzig loop pre-measured artificial chordae technique.

Methods: From August 2008 to November 2010, 154 mitral valve interventions were done in our institute. Of these, 66 were mitral valve replacements and 88 (58%) were mitral valve repairs. Preoperative 3D echo was used for the precise design of the repair. Of the 88 mitral valve repairs, artificial chordae were implanted in 15 patients (17%); in 12 of these 15 (80%) the pre-measured artificial chordae technique was used. All patients had severe symptomatic MR, while nine had anterior and posterior leaflets prolapse, two had anterior leaflet prolapse, and one had posterior leaflet prolapse.

Results: A mean of 8.6 ± 5.4 artificial chords were used in this patient cohort, with a maximal number of 17 chords per patient and a minimal number of two per patient. All patients were male, with a mean age of 54 ± 9 years. The artificial chords were connected to the anterior leaflet in six patients, to the posterior leaflet in one patient, and to both anterior and posterior leaflets in five patients. Concomitant interventions included posterior leaflet resection and sliding-plasty in five patients, CABG in three, Maze in two, and tricuspid valve repair in two. Postoperative echocardiography revealed no residual MR in four patients (33%), trivial MR in six patients (50%), and mild MR in two patients (17%).

Conclusions: Early surgical results indicated that the Leipzig loop technique for multiple chordae implantation was safe and efficient. This technique is especially important for the repair of myxomatous Barlow mitral valve disease.