Early experiences with a new three-dimensional annuloplasty ring for the treatment of functional tricuspid regurgitation.

Abstract:
Various techniques and devices have been proposed for tricuspid valve (TV) repair in patients with tricuspid regurgitation (TR). However, residual or recurrent TR is not uncommon occurring in 20% to 30% of patients. This study reports first experiences with a new three-dimensional annuloplasty ring. We retrospectively reviewed 200 consecutive patients who underwent TV repair for functional TR with the Contour 3D annuloplasty ring (Medtronic, Minneapolis, MN) from December 2010 to February 2013 at our institution. The follow-up is 98% complete (mean 1.0 ± 0.7 years; cumulative total 189 patient-years). Mean age was 70.4 ± 9.1 years and the median logistic European system for cardiac operative risk was 7%. Sixty-nine percent of the patients were in New York Heart Association class III/IV.

Echocardiography documented moderate or severe TR in 97.5% of the patients, with a mean annulus diameter of 45.1 ± 4.9 mm; 93.5% of the patients underwent a combined procedure, and 20.5% an urgent or emergent operation. The 30-day mortality was 6%. The preoperative TR grade was reduced from 2.45 ± 0.53 to 0.77 ± 0.54 (p < 0.001). At hospital discharge residual II TR or greater was present in 4.3% of the patients. Freedom from recurrent II TR or greater at 2 years was 90.9% ±
4.2% and freedom from TV-related reoperations at 2 years was 98.5% ± 1.0%. No case of ring dehiscence occurred. Fourteen patients (7%) required a permanent pacemaker implantation for atrioventricular block. Tricuspid valve repair with the Contour 3D annuloplasty ring can be performed with a low rate of residual TR at hospital discharge, a low reoperation rate, and with an excellent early functional outcome.