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Anatomic and functional respect in ventriculoplasty: The twist technique

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Background & Objective: Since 1996, we have developed an innovative technique of ventriculoplasty, the “twist technique” (TT). The procedure performed has the purpose of preserving not only the volume and the shape of the LV but, above all, to restore the physiologic counterclockwise (CCW) twist of the cardiac apex through a rearrangement of its fibers, rebuilding the natural apical vortex of the LV. We present our experience in LV remodeling.

Methods: From 1996 to 2015, 289 patients with post-infarction LV aneurysm underwent reconstructive procedures. Mean age was 56.4 ± 7.3 years. Average LV ejection fraction (EF) was $38.9 \pm 11.6\%$. LV reconstruction was performed by using the TT in 265 patients (91.7%). Jatene technique was also performed. Afterwards, the orifice closure was obtained performing the TT: a running 2-0 polypropylene suture orients cardiac fibers remodeling heart apex in a cone shape; stitches are outdistanced of 1 cm on the lateral side of the endocardial wall and of 1/2 cm on the endocardial septum. The distal and akinetic portion of the septum is folded and therefore excluded. In 257 patients (88.9%) concomitant myocardial revascularization was performed.

Results: Perioperative mortality was 2.4%. Mean follow-up was 8.45 ± 4.2 years. Actuarial survival rate at 13 years was 73%. The physiological movement of the new apex that unfolds in a natural CCW twist has considerably improved LVEF. Mean post-operatively EF was $46.1 \pm 9.3\%$.

Conclusion: LV remodeling using the TT reproduces physiological CCW torsion of the cardiac apex; it is a safe surgical procedure with low perioperative mortality and excellent long-term survival.

Biography

Giuseppe Petrone has completed his degree in Medicine and Surgery from Second University of Naples (Italy) and is Specialist in Cardiovascular Surgery since May 2015. He has worked as a Registrar and Clinical Fellow in Hammersmith Hospital (Imperial College, London) for a year (from May 2014 to April 2015). He is a Resident in the Cardiovascular Department of “Heart Centre-City of Alessandria”. He has been invited to discuss his research projects in occasion of important meeting (59th annual conference of the Israel Heart Society, Tel Aviv 2012; 61st annual conference of the Israel Heart Society, Tel Aviv 2014, Heart Valve Society Meeting, New York 2014; Mitral Valve Conclave, New York 2015; and EACTS, Amsterdam 2015). He has published 4 papers in reputed journals.

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