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Gian Luca Martinelli

San Gaudenzio Clinic, Italy

Why Suture less in Aortic Valve Replacement?

Aortic valve replacement (AVR) via a median sternotomy approach, has been largely shown to be safe and long-term efficacious, and thus currently represents the “gold-standard” approach for aortic stenosis treatment. Over the past two decades the number of AVR interventions has dramatically increased with outcomes that have improved despite the increasing age of patients that carry a growing burden of comorbidities. Octogenarians and high-risk patients, who were contraindicated for surgery in the past, currently represent a considerable portion of daily surgical activity, with increased survival and functional benefits being reported afterwards. Nevertheless, until recent years there were reports of a significant rate of patients who were deemed inoperable and so turned down for AVR mostly based on age and subjective estimation of procedural risk. This observation has recently triggered the development of less invasive interventions such as percutaneous trans-catheter aortic valve implantation (TAVI) and minimally invasive aortic valve replacement, to reduce the traumatic impact of the surgical procedure, thus fulfilling lower risk patients’ expectations on the one hand and extending the operability toward increasingly high-risk patients on the other. In this setting, minimally invasive AVR (Mini-AVR), by allowing reduced surgical dissection, may lead to lower blood loss, wound complications, postoperative pains, improved postoperative respiratory recovery, earlier mobilization and functional recovery. However, due to the technical challenges involved and the lack of robust data showing a substantial survival benefit and a reduced occurrence of major post-operative complications from MI-AVR over conventional management, this approach has not been universally adopted. Opponents of minimally invasive AVR claim that potential advantages (reduced surgical chest trauma and improved cosmetic) are counterbalanced by longer cross-clamp and cardiopulmonary bypass (CPB) duration, which are associated with poorer outcomes. However, the introduction of suture less bio-prosthesis and Rapid Deployment Valve (RDV), has transformed the Mini-AVR easier, more fast and reproducible. In our personal experience in the last five years, we treated all patients in Mini-AVR with those new surgical prostheses and we consider TAVI in high risk/inoperable patients and in octogenarian. We have compared clinical results of surgical treatment of isolated aortic stenosis (mini-AVR/standard AVR/TAVI) in our Center and we have observed that mortality rate has decreased (from 3% to 1 % in the last 5 years) and the Logistic Euroscore has increased (from 7% to 12% in the same period). Furthermore, our experience with more than 250 cases, RDV showed good outcomes at discharge and 24 months with an excellent haemodynamic profile exhibiting no severe prosthesis – patient – mismatch, even in patients with a small annulus. Para valvular leaks were non-existent or trivial in all cases. These preliminary results suggest potentially advantage of RDV in patients with small aortic annulus

Biography

Martinelli Gian Luca is currently working as Vascular Surgeon at San Gaudenzio Clinic - Gruppo Policlinico di Monza- Novara, Italy. From 2014-2015: Head of Cardiac Surgery Department Policlinico di Monza- Monza Brianza, Italy. September 2012 to May 2014 co-Director of Cardiac Surgery Service, Casa di Cura Santa Maria (private hospital accredited by Servizio Sanitario Nazionale - Italian National Health Service), Bari. From 2002-2012: Head of Cardiac Surgery service in the Cardiovascular Department of St. Anna Hospital, Catanzaro, referral Center accredited by Servizio Sanitario Nazionale (Italian National Health Service). Free-lance cardiac surgeon with Azienda Sanitaria Ospedaliera San Giovanni Battista-Molinette Hospital in Turin in 2001. In 2000: Consultant for the Jo Ann Medical Center of Tblisi, Republic of Georgia, where I initiated the first Center of Cardiosurgery for adults, with the support of local government. From January 2 1996 - August 2000: Full-time Staff Assistant at the Cardiovascular Surgery Department of the Hospital Villa Maria Pia in Turin. Responsibilities as primary surgeon. From January 26 1994-January 2 1996: Staff Assistant at the Organic Surgery Unit for Cardio and Vascular Surgery of the Silvestrini Hospital of Perugia (Head: Professor Ugo Mercati).