ventricular stroke volume, there was a significant decrease in hypokinetic chords from 61.1 ± 12.8 to 36.5 ± 14.8 (p < 0.001) [3]. This was in the anterior and anterolateral segments in anterior aneurysms and in the inferior and inferobasal segments of the inferior aneurysms. There was also a significant decrease in akinetic/dyskinetic chords from 32.5 ± 11 at baseline to 25 ± 8.1 following surgery (p < 0.001). Here, the akinetic/dyskinetic chords in the postoperative ventricle conformed to the intracavitary patch which remained akinetic. We agree with Dr Poullis that the success of surgical ventricular restoration (SVR) depends on the presence of discrete areas of akinesis/dyskinesis, conforming to scar tissue and definite areas of contractile myocardium. For patients with diffusely hypokinetic ventricles, the only option would be cardiac transplantation, if eligible. This has been adequately described in our article [4].

Our study follows Pocar et al. [5] in validating the surgical techniques resulting in a more ellipsoid ventricular geometry. Our left ventricular shape analysis also proved significantly better alignment of the contractile myocardial fibers in the anterior wall, which was not seen with endoventricular circular patch plasty [6]. In our patients, despite a postoperative decrease in left ventricular stroke volume, there was a significant clinical improvement as assessed by functional class, which cannot be attributed to decreased contractility. This has also been proved by our centerline analysis and shape analysis. The heart rate did not change significantly following surgery (baseline heart rate (HR): 84 ± 3 beats per minute (BPM) to postoperative HR: 81 ± 4 BPM). The phenomenon of decreasing stroke volume following SVR will be the subject of future study.

REFERENCES


LETTER TO THE EDITOR

Sutureless anastomoses: the main goal for a calcified aorta?

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We read with great interest the article written by Dohmen et al. published in the EJCTS January 2011 [1]. The authors reported on their experience with the PAS-Port automated proximal aortic connector device (ACD) in 17 patients with heavily calcified aorta during coronary bypass surgery grafting (CABG). The early graft patency in every patient was proven by computed tomography (CT) scan after 30 days. To avoid aortic manipulation, every CABG procedure was performed in off-pump beating-heart technique, though two patients had to convert to cardiopulmonary bypass (CPB) in case of ventricular fibrillation and hemodynamic instability. These two patients suffered from prolonged reversible neurological deficits (PRIND) and another one from long-lasting postoperative delirium.

With respect to the older patient population, every heart surgeon is familiar with the problem of severe calcified aorta not only during CABG procedure. As described in the article, there are many different strategies in the literature to cope with this problem during CABG surgery, such as off-pump aortic ‘no-touch technique’ using t- or y-arterial grafts to the internal thoracic arteries [2]. The use of ACDs in this special patient population, as stated in the article, is not new. Though many technical problems, for example, proper alignment of the vein graft and early graft thrombosis, were seen in the initial phase after using ACDs, the results are not worse than hand-sutured anastomoses. However, midterm results remain poor and led to abandonment of ACDs in the routine use. Long-term follow-up for ACDs will be the subject of future study.

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patients is hardly available. We have published a 6-year ACD (SJM Symmetry) follow-up in one of those calcified patients showing, in CT scan, angiographically and intra-operatively, a patent ACD anastomosis [3]. However, this is certainly not enough. We totally agree with the authors that a solution besides manipulating and clamping a calcified aorta must be found. In our institution, we rely on hand-sutured anastomoses with the HEARTSTRING® (Maquet, Hirrlingen, Germany) device, as described by Vicol et al. in 2006 for proximal anastomoses during off- and sometimes on-pump procedures. By using this device in combination with epi-aortic ultrasound, stroke rate could be reduced to 0.48% and mortality rate to 1.9% in our off-pump population [4,5]. We are all aware that the aortic no-touch technique should be the gold standard (especially) for patients with atherosclerotic aortic diseases. In our opinion, clampless hand-sewn anastomoses remain superior in comparison to ACDs, whenever proximal anastomoses to a calcified aorta are performed.

REFERENCES


LETTER TO THE EDITOR RESPONSE

Reply to Puehler et al.

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We thank Puehler et al. [1] for their interest and comments on our article [2] and would like to reply as follows: We did not claim that use of automated proximal aortic connectors is new in the setting of porcelain aorta. What is new with the PAS-Port® device is that absolutely no foreign (stent) material reaches into the graft lumen due to its unique design. This may contribute to the excellent intermediate term results concerning reported 9-month graft patency rates [3].

Certainly there are other options for proximal anastomoses in coronary artery bypass grafting (CABG) surgery, but the cited article by Hilker et al. [4] pursued a completely different purpose. In our article, we reported on the feasibility and safety of the PAS-Port connector in patients with porcelain aorta, whereas Hilker et al. investigated the influence of clampless aortic anastomoses using the HEARTSTRING device on the stroke rate in off-pump coronary artery bypass (OPCAB) surgery. It was not an institutional study, as mentioned by Puehler, but an (excellent) single-surgeon experience. Furthermore, they did not specify the number of patients with porcelain aorta (if any) nor did they perform epi-aortic ultrasound.

Again, we totally agree that, in case of severe aortic calcification, every attempt must be made to avoid any aortic manipulation. Accordingly, it seems somewhat contradictory that, in the cited case-report by the author himself [5], an automated aortic connector was used because of severe calcification, but then, 6 years later, the same aorta was cross-clamped for aortic-valve replacement.

Finally, the author provides no scientific data for the concluding remark that hand-sewn (CABG) anastomoses remain superior to automated proximal connectors in case of aortic calcification. On the contrary, we believe that a PASPort® anastomosis can be performed safely after manual and epi-aortic echocardiography examination and determination of graft origin, as has been shown. We would like to conclude that, for patients with porcelain aorta and coronary artery disease, surgery is not the treatment of choice and, if it is to be performed, all attempts should be made to avoid any aortic touch. Further, if one still needs to do an aortic anastomosis, the best technique is the familiar one, either hand sewn or PAS-Port®. However, by all means, do not clamp!

REFERENCES