Letter to the Editor

Retrocaval right internal mammary artery for left ventricular marginal arteries grafting

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We read with interest the paper entitled ‘Retrocaval in situ right internal mammary artery (RIMA) for distal marginal arteries grafting’ by Ramadan et al. [1] and congratulate the authors for the clear exposure of the technique, but nevertheless, we would like to add some further exactitudes.

Routing of the in situ RIMA behind the superior vena cava and further into transverse sinus was introduced firstly by Pliam et al. in 1993 [2]. In 1997, we introduced routinely the retrocaval RIMA routing, initially as a simple conduit for grafting the obtuse marginal artery. Later on, we applied two new composite grafts configurations: (1) right Y-graft (or λ-graft configuration) [3–5] and (2) right T-graft [4], employing both skeletonized IMAs without opening the pleurae and retrocaval in situ RIMA. The retrocaval in situ RIMA employed by Ramadan et al. [1] is almost identical to the technique previously reported by our group [3–5] and we do believe that the bibliography accompanying their report is incomplete. So far, almost 70 patients have undergone total arterial myocardial revascularization according to these new configurations with excellent results. Twenty of them underwent right Y-graft technique without employing the extracorporeal circulation. The postoperative angiographic data and the in situ left and right IMA flow dynamics (mean velocity, coronary flow reserve, diameter, mean flow, etc.) were excellent [5].

Based in our experience, we agree with the authors’ opinion that routing of the in situ skeletonized RIMA, behind the superior vena cava and further into transverse sinus, allows additional length, facilitating lateral coronary arteries grafting via a less circuitous and more protected route. The important gain in the RIMA length, due to the employed skeletonized technique and routing behind the superior vena cava, gives the possibility of composite arterial graft construction with this conduit [3–5]. Surprisingly, the authors of this report [1] have not employed the composite grafts constructed with the in situ retrocaval RIMA in any of their 30 reported patients!

The retrocaval in situ RIMA is a potential benefit due to blood supply flow advantages, related with grafting both in situ IMAs to the left ventricular coronary arteries. There are no grafts crossing the mid-line behind the sternum, as in cases when RIMA is anastomosed to the left anterior descending artery, which can be considered as an advantage in cases of mediastinal revision or reoperation. The clamping time is reduced due to less proximal anastomoses performed in the ascending aorta and if necessary, the composite grafts may be constructed without extracorporeal circulation. Preserving the pleural integrity, as we usually do during IMA harvesting according to the skeletonized technique, is associated with a better postoperative respiratory function [6].

In conclusion, the reported data by Ramadan et al. [1] adds some further information regarding the effectiveness of the retrocaval routing of the in situ skeletonized RIMA for grafting left ventricular marginal arteries. Moreover, we would appreciate if other surgeons, who have rediscovered and employed the retrocaval RIMA routing, evaluate and study the outcome in their series, discussing the effectiveness and safety of the composite grafts with retrocaval RIMA routing.

References


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