surgical techniques, one should expect better outcome, and basically, low early postoperative mortality. It has always been mentioned that atrioventricular septal defect repair is "the state of art" that demans significant reconstruction, mainly focused on left atrioventricular (AV) valve function. Naturally, surgical experience has a great impact on the outcome, as you mention, the "learning curve", wherein we believe that experience itself is the most important factor affecting the result. We reported slightly higher early mortality rates in the older cohort, but it did not show a statistical significance. In this series, many different leading surgeons participated in the clinical practice during different periods; each experienced their own learning curves. One of the reasons for the lack of concordance can be this difference. However, we must admit that despite the changing of surgeons, all the factors that were listed as a cause of improvement in early mortality, like advances in perfusion techniques, better myocardial protection, better postoperative management, have an impact on the overall outcome. We think the result would be different if fewer surgeons had participated in the practice. Transesophageal echocardiography (TEE) is definitely a very valuable tool to detect residual defects and AV valve function; however, we do not recall a case that was re-repaired according to TEE findings. Surgeons generally accept the best possible valve repair simply tested by saline during the operation, but in TEE, there is an immediate feedback. We have completed our learning curve fast with the aid of TEE, therefore we do not use TEE as often as we did in the past.

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About the saphenous vein graft patencies after coronary artery bypass surgery

To the Editor,

We congratulate the authors for their work (1). In this study, the morphological factors affecting the long-term patency of the grafts used for revascularization in coronary artery bypass graft surgery were examined. The type of graft used for revascularization, the diameter of the target vessel, and the stenosis ratio of the target vessel effective to determine long-term patency were determined. We agree with the authors' conclusions. No relationship between saphenous vein graft length and long-term graft patency was observed. However, for the saphenous vein, we do not agree with the authors' conclusion. The saphenous vein is generally about 5-7 mm in diameter. In some cases, this may be even higher, especially above the knee. The mean diameter of the target coronary artery is between 1-2 mm. Because of this diameter mismatch, saphenous vein anastomosed to the coronary artery will cause stagnation because of hemodynamics. Stagnation is shown as a shaded area in Figure 1. As the length of the saphenous vein increases, the area of stagnation will increase and the graft patency will decrease (Fig. 1). Longer and wider saphenous vein grafts will cause more blood to be pooled, and the graft patency will be further imparied. Therefore, a 10-mm diameter graft is not used in femoro-popliteal bypass. Unlike the study, we do not agree that saphenous vein graft length does not affect graft patency. However, the situation is slightly different in arterial grafts. Arterial grafts have the capac-

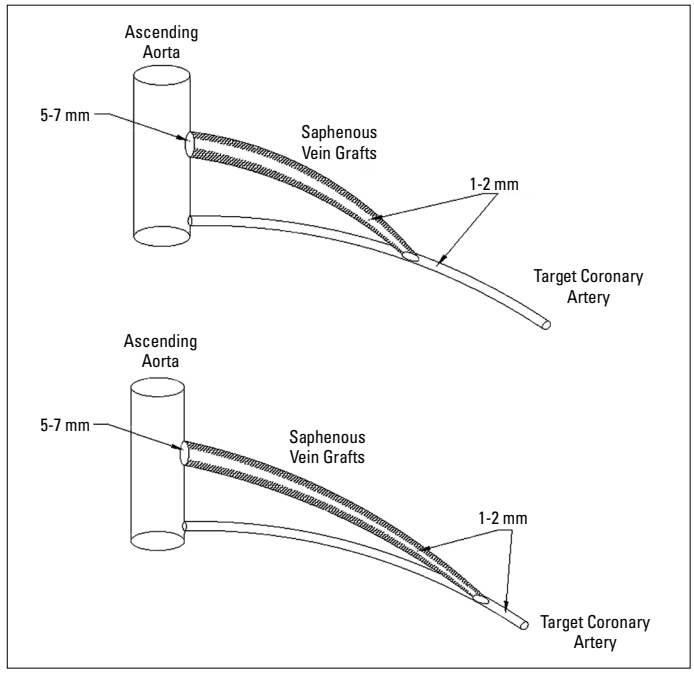

Figure 1. Demonstration of the increase in stagnated area as the length of the saphenous vein increases

ity to decrease or increase their diameter over-time to match the target vessel. Therefore, arterial grafts do not have stagnation because of diameter mismatch. The length of the anastomosis is also an important factor to determine the patency of the graft because it affects the amount of rotation of the flow.

The long-term patency of the saphenous vein grafts, harvested above and below the knee, is another issue. In the erect position, the venous pressure in the ankle can reach up to 150 mm Hg. Therefore, the veins harvested under the knee are adaptive to more pressure (unlike the veins harvested above the knee), and they are also more adaptive to the arterial flow. This may increase long-term patency. Thus, we believe that this parameter should also be considered.

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Author`s Reply

To the Editor,

We thank the reader for his interest in our study (1) on the influence of the morphological and pathophysiological factors upon graft patency. We agree that the diameter of normal saphenous veins is superior to that of normal coronary arteries. At the same time, there are also anatomical variations related to the studied population, harvested segment, and postoperative time interval.

In our case, 163 (91.06%) of saphenous vein grafts (SVGs) were harvested below the knee. Patent SVGs had a mean diameter of 3.55±0.76 (1.8–6) mm compared to a mean diameter of 2.14±0.52 (1–5) mm for the target coronary artery at 139.78±36.64 months post-coronary artery bypass grafting (CABG). In case of patent grafts, the diameter mismatch is inferior to the one suggested by the reader. Indeed, we found that a target vessel <1.5 mm is a significant risk factor for the occlusion of venous and arterial grafts. We do not exclude the possibility of an increased diameter mismatch in case of occluded SVGs, but this aspect cannot be evaluated using computed tomography angiography. Regarding the length of the graft, we used the ratio between graft length and patient height because we considered it more relevant than absolute graft length. No difference between these ratios were found when comparing patent and occluded grafts for the following configurations: SVG-MO (marginal obtuse artery), SVG-diagonal artery, SVG-PDA (posterior descending artery), and SVG-RCA (right coronary artery).

The above-mentioned results could be biased by an aspect that we were unable to estimate and is still incompletely clarified in the international literature, namely postoperative morphological and histological changes of SVGs.

According to Fitzgibbon et al. (2), approximately 10% of SVGs occlude in the first year after which there is a continued attrition, which accelerates as grafts age. Fan et al. (3) who compared the long-term failure of SVGs with the left internal mammary artery (LIMA) graft, affirm that there is a decrease in lumen size in the entire SVG and anastomosis of different patients in a sequence of ~1, 5, and 10 years postoperatively despite negligible changes in the size of the LIMA. Suzuki et al. (4) evaluated 65 SVGs at 1 year after CABG and found that minimal and mean lumen diameters together with SVGs length significantly decreased. The graft shortening rate was reported to be >5% in 51% of cases and >10% in 35% of cases.

In conclusion, there is a possibility that SVG length and diameter decrease in the long-term due to wall changes and hemodynamic adaptation as well as the presented results do not reflect SVGs parameters during surgery.

We will further investigate the aspects suggested by the reader by reviewing the early postoperative angiograms of the analyzed patients (where available) and comparing the results with those obtained in the current study to assess SVG attrition mechanism and causes.

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