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DISTENDED OR NOT DISTENDED? FAT OR NUDE SAPHENOUS VEIN? IN MEDIO STAT VIRTUS

Reply to the Editor:

In an editorial comment, Michael Jessen¹ argues that although most surgeons² are advocating the use of all arterial grafts for coronary artery bypass grafting, 70% of patients in the United States still

received at least 1 saphenous vein graft (SVG). In addition to the underuse of all arterial grafting, an SVG is considered a good option to graft the right coronary system, especially in case of target stenosis less than 80%³ and the bilateral internal thoracic artery is grafted to the left coronary system. Moreover, in elderly patients, the use of a single internal thoracic artery to the left anterior descending artery along with the SVG has been widely considered to achieve good outcomes.

Thus, along with Jessen,¹ we wonder why so few efforts have been made to improve SVG patency. In this scenario, the idea by Souza and coworkers^{4,5} to harvest the SVG with surrounding tissue looks appealing and promising. In fact, as brilliantly argued by the authors, with this harvesting technique there is no manipulation of the graft, preserving both adventitia and endothelium, and avoiding graft spasm. But if it is true that surrounding tissue acts as a buffer as demonstrated by Dashwood and colleagues,⁶ SVG distention, even at 300 mm Hg for 1 minute, can be dangerous for endothelial integrity.⁶ In fact, the same group evaluated the effect of graft distention on the luminal endothelium by CD31 staining. Even if conventional SVG harvesting with denudation and distention showed the highest degree of endothelium damage (4.66), veins with perivascular tissue (PVT) and distention (no-touch technique) showed CD31 staining (7.54) similar to veins without PVT and no distention (7.50), whereas veins with PVT without distention showed the lowest grade of damage (8.38). In the same study, this trend was confirmed by other analyses. Although PVT plays a protective role in the case of SVG distention, the latter is somewhat dangerous for vein endothelium and should be avoided, even in case of low pressure distention (300 mm Hg).

Finally, another issue to solve is where harvested SVG should be stored before grafting: saline solution, warm blood, or other solution. Some in vitro or animal studies are consistent in demonstrating the detrimental effects of saline on vascular endothelium and therefore graft patency, but there is no agreement to decree warm blood superior as a storage medium.⁷

We believe that the protective role of surrounding tissue in case of SVG harvesting is flawless and separated from the action of avoiding overdilatation, but as in Latin, in medio stat virtus, that is, virtue stands in the middle. The best choice may be harvesting the SVG with the surrounding tissue to take advantage of its effect as a buffer, but connecting the SVG to the arterial cannula allows the vein to distend at the patient's own arterial pressure, as suggested by Angelini and coworkers.⁸

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