Look but don't touch! An alternative to the gold standard?

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Disclosures: Authors have nothing to disclose with regard to commercial support.

Received for publication March 23, 2017; revisions received March 27, 2017; accepted for publication April 4, 2017; available ahead of print May 4, 2017.

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J Thorac Cardiovasc Surg 2017;154:467-8

0022-5223/\$36.00

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<http://dx.doi.org/10.1016/j.jtcvs.2017.04.007>

The clinical evidence for the superiority of the left internal thoracic artery as a conduit for grafting the left anterior descending coronary artery with respect to patency and improved survival is well established.^{1,2} As such, the Society of Thoracic Surgeons has made the use of this conduit a quality issue.³ In their article in this issue of the *Journal*, Samano and colleagues⁴ have asked the question of whether the use of saphenous vein harvested with the no-touch technique is a good alternative when the left internal thoracic artery is unsuitable. Although the left internal thoracic artery is now by far the most commonly used conduit to bypass the left anterior descending artery, most series suggest that it is not used in approximately 5% of cases. The potential causes for its not being used include damage during harvest, poor flow, or other concerns about its quality. It may also not be used when there are concerns about increased morbidity in patients who are unlikely to benefit from its superior long-term patency. The no-touch saphenous vein technique, in which the vein is harvested with a pedicle and is not distended, is an attempt to minimize damage and thereby improve long-term patency. Limited published results to date are encouraging.^{4,5} Samano and colleagues⁴ are long-term users of this technique. They have retrospectively looked at their patients who received no-touch saphenous vein as a graft to the left anterior descending artery. In the 91 patients who were available to undergo computed tomographic angiography, 95.6% (87/91) of the no-touch saphenous vein grafts to the left anterior descending artery were patent at a mean of 6 years after implantation. As Samano and colleagues⁴ point out, this is comparable to the reported patency of the left internal thoracic artery. Their primary conclusion was that if for any reason the left internal thoracic artery is not appropriate for use, then the no-touch venous graft can be considered as a potential good alternative.

A strength of this study is the relatively objective measure of patency in their study group, which used computed tomographic angiography rather than clinical end points. Its limitations are clearly discussed by

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Central Message

The long-term results of the saphenous vein harvested with the no-touch technique appear comparable to those of the internal thoracic artery, providing a plausible alternative for octogenarians.

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Samano and colleagues.⁴ It is a small observational cohort trial with possible selection bias. Of the original 168 patients, 71 were unavailable for follow-up, and these included 34 who had died. Despite the impressive patency figures, it would be unreasonable to extrapolate beyond the conclusions of Samano and colleagues⁴ themselves that saphenous vein harvested with the no-touch technique can be considered as an alternative to the left internal thoracic artery when the use of the latter is inappropriate.

A secondary aim of this study was to compare the patencies of no-touch saphenous vein grafts to the left anterior descending artery with those at different sites. They demonstrated no significant difference. This is additional evidence for the efficacy of the saphenous vein harvested by the no-touch method. The limitations of the study, however, preclude conclusions stronger than this. As Samano and colleagues⁴ suggest, a large-scale prospective trial of the use of no-touch saphenous vein grafts may be appropriate and would be necessary to prove that it is more than just a promising alternative. Samano and colleagues⁴ are to be congratulated on their perseverance with this technique, because it has clearly demonstrated improved patency rates relative to previously published data.

With the advent of total arterial revascularization and advances made by complex percutaneous coronary

interventions, including the recent trials on patients with left main stem disease, it is refreshing to see the saphenous vein doing well. The main argument that cardiologists have for hybrid revascularization is that less optimal outcomes are seen with surgery with the non-LAD targets. This is less true with complete arterial revascularization, but now the no-touch technique may allow the saphenous vein to get back in the ring. Those institutions running an endoscopic vein harvesting program may find it difficult to emulate this technique, but it may still be possible with the bridge technique, especially with the aid of preoperative ultrasonographically guided vein mapping. Bespoke surgical revascularization is now a reality, and as surgeons maybe all we really need to do is just start respecting the vein a little bit more.

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