

vein architecture using the “no-touch” technique is crucial for its improved patency. On the basis of long-term follow-up data, we hope to encourage trainee surgeons and established cardiac surgeons to convert to this technique. Further research comparing “no-touch” SV with RA is needed to corroborate evidence on the graft of second choice in CABG.

Tomislav Kopjar, MD
Bojan Biočina, MD, PhD
Hrvoje Gašparović, MD, PhD
Department of Cardiac Surgery
University Hospital Centre Zagreb
School of Medicine University of
Zagreb
Zagreb, Croatia

References

1. Cao C, Manganas C, Horton M, Bannon P, Munkholm-Larsen S, Ang SC, et al. Angiographic outcomes of radial artery versus saphenous vein in coronary artery bypass graft surgery: a meta-analysis of randomized controlled trials. *J Thorac Cardiovasc Surg.* August 4, 2012 [Epub ahead of print].
2. Souza DS, Johansson B, Bojö L, Karlsson R, Geijer H, Filbey D, et al. Harvesting the saphenous vein with surrounding tissue for CABG provides long-term graft patency comparable to the left internal thoracic artery: results of a randomized longitudinal trial. *J Thorac Cardiovasc Surg.* 2006; 132:373-8.
3. Johansson BL, Souza DS, Bodin L, Filbey D, Loesch A, Geijer H, et al. Slower progression of atherosclerosis in vein grafts harvested with “no touch” technique compared with conventional harvesting technique in coronary artery bypass grafting: an angiographic and intravascular ultrasound study. *Eur J Cardiothorac Surg.* 2010;38:414-9.
4. Dashwood MR, Tsui JC. “No-touch” saphenous vein harvesting improves graft performance in patients undergoing coronary artery bypass surgery: a journey from bedside to bench. *Vascul Pharmacol.* August 8, 2012 [Epub ahead of print].
5. Lopes RD, Hafley GE, Allen KB, Ferguson TB, Peterson ED, Harrington RA, et al. Endoscopic versus open vein-graft harvesting in coronary-artery bypass surgery. *N Engl J Med.* 2009;361:235-44.

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Reply to the Editor:

We thank Kopjar, Biočina, and Gašparović for their interest in our recently published meta-analysis comparing midterm patency outcomes of

radial arteries versus saphenous veins as conduits for coronary artery bypass grafting.¹ The authors advocated the use of the “no-touch” vein harvesting technique, which was previously demonstrated by Souza and colleagues² to result in improved patency compared with conventional harvesting involving stripping of perivascular fatty tissue and distention of the vein under pressure.

A multitude of factors relating to the conduit contribute to determine graft patency, including artery versus vein, skeletonized versus pedicled/“no-touch” approach, effect of harvest technique on endothelial preservation and rupture of the internal elastic lamina, and storage solution. In addition, further factors relating to the target coronary artery strongly affect conduit performance, including coronary diameter, severity of native coronary stenosis, and distal runoff. Any study that aims to compare conduit patency inherently accepts “heterogeneity of the extracted data,” providing an explanation for the incongruous results between studies.¹ To date, a unifying theory of conduit patency determination remains elusive.

The “no-touch” approach incorporates many techniques known to preserve conduit function, including endothelial preservation, mechanical support, and an intact vasa vasorum, although the dominant element responsible for superior vein patency as a coronary artery graft remains speculative. Several issues regarding this technique need to be addressed. First, no data comparing patency outcomes of this surgical approach with radial artery was identified in the current medical literature and hence was not included in our meta-analysis. Second, there is a lack of robust long-term clinical evidence for this technique and very limited data on potential short-term adverse outcomes compared with conventional vein harvesting. Specific concerns include leg wound infection, neuropathy, and increased incidence of bleeding from the pedicled vein graft, none of which

was reported by Souza and associates² in detail. Patients with peripheral vascular disease and diabetes may have an increased risk of wound infection with the “no-touch” technique, particularly when the conduit is harvested from the lower leg. It is interesting to note that patients with these risk factors were excluded from the trial.² Nonetheless, the “no-touch” technique should be acknowledged as a feasible alternative to the current standard practice with the potential to offer improved patency outcomes and should be further investigated in larger trials. Unfortunately, the SUPERIOR SVG Trial referenced in the letter only aims to measure short-term patency outcomes at 1 year.

Another important point raised by Kopjar, Biočina, and Gašparović was their concern regarding the endoscopic vein harvesting technique, which is growing in popularity but lacking strong clinical evidence. Potential benefits of this minimally invasive procedure in regard to reduced wound infection and pain may come at a cost of graft patency and major adverse cardiovascular events.^{3,4} In addition, there have been concerns regarding the shearing of side branches, a significant learning curve, and uncertain cost-effectiveness of the endoscopic technique. We agree with Kopjar, Biočina, and Gašparović that there is an urgent need to systematically review this relatively novel surgical technique in regard to its safety and efficacy.

Christopher Cao, MBBS^{a,b,c}

Con Manganas, MBBS^c

Michael Byrom, MBBS^b

Tristan D. Yan, MD, PhD^{a,b,d}

*^aThe Systematic Review Unit
 Collaborative Research (CORE)
 Group*

*^bThe Baird Institute for Applied Heart
 and Lung Surgical Research*

*^cDepartment of Cardiothoracic
 Surgery*

St George Hospital

*^dDepartment of Cardiothoracic
 Surgery*

University of Sydney
Royal Prince Alfred Hospital
Sydney, Australia

References

1. Cao C, Manganas C, Horton M, Bannon P, Munkholm-Larsen S, Ang SC, et al. Angiographic outcomes of radial artery versus saphenous vein in coronary artery bypass graft surgery: a meta-analysis of randomized controlled trials. *J Thorac Cardiovasc Surg.* 2012 Aug 4. [Epub ahead of print].
2. Souza DS, Johansson B, Bojo L, Karlsson R, Geijer H, Filbey D, et al. Harvesting the saphenous vein with surrounding tissue for CABG provides long-term graft patency comparable to the left internal thoracic artery: results of a randomized longitudinal trial. *J Thorac Cardiovasc Surg.* 2006;132:373-8.
3. Lopes RD, Hafley GE, Allen KB, Ferguson TB, Peterson ED, Harrington RA, et al. Endoscopic versus open vein-graft harvesting in coronary-artery bypass surgery. *N Engl J Med.* 2009;361:235-44.
4. Davis Z, Jacobs HK, Zhang M, Thomas C, Castellanos Y. Endoscopic vein harvest for coronary artery bypass grafting: technique and outcomes. *J Thorac Cardiovasc Surg.* 1998;116:228-35.

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CLINICAL IMPLICATIONS RELATED TO PREOPERATIVE DETECTION OF STAGE IA LUNG ADENOCARCINOMA

To the Editor:

We read with interest the article by Tsutani and colleagues.¹ They aimed to determine clinical predictors of nodal involvement in stage IA lung adenocarcinoma and successfully identified that tumor size <0.8 cm and maximum standardized uptake value <1.5 are predictive for stage N0 status. We would like to discuss the following interesting items.

One of the most important indications for sublobar resection is the absence of nodal disease (ie, stage N0), which is usually preoperatively investigated by computed tomography (CT) and positron emission tomography (PET)-CT scan.² A more accurate evaluation of nodal status can be obtained by intraoperative nodal dissection with frozen section, as reported by the authors.¹ However, the intraoperative evaluation of every hilar and mediastinal nodal station appears to be too difficult to be routinely performed in

clinical practice. To avoid this, Tsutani and colleagues identified 2 factors statistically significant for preoperative prediction of N0 status. In particular, it is remarkable that these 2 parameters are easily achievable by the chest CT and PET-CT scan that are always performed when staging the disease of every patient with lung cancer.

We work daily with patients who should be excluded from surgery because their poor general health conditions or advanced age strongly advise against lobectomy. Tsutani and colleagues' findings should be particularly useful with these patients because they allow clinicians to preoperatively determine patients in which lobectomy can be avoided and sublobar resection with nodal sampling is enough. This increases the number of candidates for surgery.

Another item that we would like to underline is that the chance to preoperatively determine N0 status and therefore to plan a sublobar resection allows surgeons to understand the proper access to adopt. In particular, the possibility of performing a wedge resection with nodal sampling should increase the chance to perform video-assisted thoracic surgery,³ increasing once again the number of candidates for surgery.

One more interesting point is that tumors determined to be <0.8 cm or with maximum standardized uptake value <1.5 are characterized by a minor pathologic invasiveness and therefore are related to a better disease-free survival after sublobar resection.

Finally, we have 1 suggestion regarding the technique used in PET-CT scan for lesions affected by physiologic motion as pulmonary nodules. We suggest the use of respiratory gating⁴ because this method results in lesion volumes closer to those assessed by CT and improves measurements of tracer uptake.

Alessandro Baisi, MD^a
Matilde De Simone, MD, PhD^b
Ugo Cioffi, MD, PhD^b
^aThoracic Surgery Unit
Azienda Ospedaliera San Paolo

Milano
University of Milan
Milan, Italy

^bDepartment of Surgery
Fondazione IRCCS Ca' Granda
Ospedale Maggiore Policlinico
Milano
University of Milan
Milan, Italy

References

1. Tsutani Y, Miyata Y, Nakayama H, Okumura S, Adachi S, Yoshimura M, et al. Prediction of pathologic node-negative clinical stage IA lung adenocarcinoma for optimal candidates undergoing sublobar resection. *J Thorac Cardiovasc Surg.* 2012;144:1365-71.
2. Okada M, Koike T, Higashiyama M, Yamato Y, Kodama K, Tsubota N. Radical sublobar resection for small-sized non-small lung cancer: a multicenter study. *J Thorac Cardiovasc Surg.* 2006;132:769-75.
3. Sienel W, Dango S, Kirschbaum A, Cucuruz B, Horth W, Stremmel C, et al. Sublobar resections in stage IA non-small cell lung cancer: segmentectomies result in significantly better cancer-related survival than wedge resections. *Eur J Cardiothorac Surg.* 2008;33:728-34.
4. Werner MK, Parker JA, Kolodny GM, English JR, Palmer MR. Respiratory gating enhances imaging of pulmonary nodules and measurement of tracer uptake in FDG PET/CT. *Am J Roentgenol.* 2009;193:1640-5.

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Reply to the Editor:

We are grateful for the letter by Baisi and colleagues regarding our study,¹ and we are delighted by their thoughtful insights into our results. We appreciate their viewpoint that 2 parameters (solid tumor size <0.8 cm on high-resolution computed tomography [HRCT] or a maximum standardized uptake volume [SUVmax] <1.5 on 18F-fluorodeoxyglucose positron emission tomography-computed tomography [PET-CT]) for predicting no nodal metastasis are easily achievable by the chest CT and PET-CT scan that are always performed in staging the disease of every patient with lung cancer.²

Generally, clinical physicians measure tumor size according to the TNM Classification of Malignant Tumors (TNM) by including the ground-glass opacity (GGO) components visualized on HRCT. We have found^{3,4} that