and 47%, respectively. The correlation between graft occlusion and an overt clinical event is notoriously weak.¹

One of the caveats of ITA-SV composite grafts is size-mismatch between the conduits, creating turbulence—a known risk for early graft failure.¹ To reduce this problem, the authors chose to harvest the vein segments from the lower leg. Lower-leg vein harvest often yields segments that are larger than the ITA and might be associated with greater surgical-site complications, particularly in diabetic patients and patients with peripheral arterial disease.

The outstanding patency rates of the SV segments observed in this study were intriguing. Downstream exposure of the saphenous vein to active antithrombotic and anti-atherosclerotic substances such as nitric oxide, secreted by the ITA endothelium may account for this phenomenon.^{1,6} In this regard, the practice of using an intraluminal metal instrument to destroy vein valves is controversial and, we believe, should be avoided altogether. Mechanical endothelial injury has been repeatedly shown to be a major predisposing factor for early graft failure.^{1,7}

Despite these limitations, this study demonstrated that in carefully selected patients, perfectly constructed composite ITA-SV grafts can “walk together,” yielding outstanding

angiographic and clinical outcomes. Composite ITA-SV graft configuration might be particularly useful in the setting of calcified ascending aorta, shortage of conduits, and high risk for sternal wound complications. This configuration should be included in the armamentarium of coronary surgeons.

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Commentary: Composite grafting with the saphenous vein—Y not?

Thin X. Vo, MD, MSc, and
Fraser D. Rubens, MD, MSc, FACS, FRCSC

Here's to the crazy ones. The misfits. The rebels. The troublemakers.

The ones who see things differently.

—Rob Siltanen

From the Division of Cardiac Surgery, University of Ottawa Heart Institute, Ottawa, Ontario, Canada.

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Address for reprints: Fraser D. Rubens, MD, MSc, FACS, FRCSC, University of Ottawa Heart Institute, 40 Ruskin St, Ottawa, Ontario K1Y 4W7, Canada (E-mail: FRubens@ottawaheart.ca).

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Seeing things differently requires a lens of insight.
Photo Nadine Shaabana, Unsplash.com.

CENTRAL MESSAGE

Saphenous vein composite grafting from the internal thoracic artery may be a viable option in select situations.

Apple Inc's famous "Think Different" advertising campaign featuring this quote is one of the most memorable examples of marketing genius and counterculture branding. Apple's revival in the late 1990s was based on the notion that thinking differently is necessary for making the world a better place.

In this issue, Hwang and colleagues¹ challenge the status quo by demonstrating in their retrospective observational study that the saphenous vein (SV) can be used as a composite graft from the left internal thoracic artery (LITA) with equivalent patency rates and clinical outcomes at a median follow-up of 10 years when compared with composite grafts constructed with arteries alone.

The notion of constructing an arterial-venous composite graft seems counterintuitive because of the difference in graft caliber and endothelial phenotype between these two conduits. Early studies by Gaudino and colleagues² suggested that a composite graft with the SV attached to the LITA led to decreased patency of the LITA distal to the LITA-SV junction as a result of competitive flow and steal phenomena. In their article, however, Hwang and colleagues¹ cite several benefits for using the SV in this manner from the LITA: continued exposure to endothelium-protective substances, such as nitric oxide, from the thoracic artery; reduced length of SV required for grafting; and decreased circulatory stress load relative to a direct anastomosis to the aorta.

The current article of Hwang and colleagues¹ presents a strong message. This is an understudied conduit configuration for coronary artery bypass grafting, so this study provides us with results in an area where there is a paucity of data. Hwang and colleagues¹ have excellent clinical outcome data in 96.1% of patients with a median follow-up of 128 months.

There are several limitations to the study. The 10-year patency follow-up data were complete for only 47.2% of

patients, and 10 years represents a critical point when the effects of vein graft atherosclerosis accelerate. In addition, the trial is significantly underpowered for clinical events. It can detect a 40% difference in survival, but not a 30% difference, which would clearly be of interest to the clinician. Finally, we do not know the generalizability of the SV conduit management steps (no-touch pedicle vein harvest with valvulotomy), nor do we know the role of these steps in the intriguing results of Hwang and colleagues.¹

Despite the study's limitations, the counterintuitive concept presented by Hwang and colleagues¹ is important. The SV is still the most widely used conduit after the LITA, even though the literature suggests that SV long-term patency is limited relative to arterial grafts.³ Finding ways to utilize this conduit to its peak potential is essential in improving coronary artery bypass grafting outcomes. The option of using the SV as a composite graft is especially applicable for patients in whom the use of a second artery is contraindicated or when an anaortic technique is required (increased stroke risk or calcified aorta). We thank Hwang and colleagues¹ for sharing their data and opening our eyes to different possibilities. Some may say that putting a vein on the LITA is crazy; to that we say, "Y not?"

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