Letter by Deutsch et al Regarding Article, “Long-Term Outcomes of Endoscopic Vein Harvesting After Coronary Artery Bypass Grafting”

To the Editor:

With read with interest the article by Dacey et al reporting on the long-term outcomes of patients after coronary artery bypass grafting having undergone open or endoscopic vein harvesting (EVH). Use of EVH was associated with a significant reduction in long-term mortality and a nonsignificant increased risk of repeat revascularization.1

Current evidence shows that EVH provides advantages in terms of wound healing and the incidence of wound infections when compared with the open conventional technique. Endoscopic vein harvesting results in better cosmetics, reduced postoperative pain, and analgesia consumption, quicker postoperative mobilization, and a shorter length of hospital stay. However, there is an ongoing controversy following conflicting data over possible disadvantages considering long-term patency of grafts harvested by this technique and the possible detrimental effects on clinical outcomes.2

Recently, a task force of the European Society of Cardiology (ESC) and the European Association for Cardio-Thoracic Surgery has published novel guidelines on myocardial revascularization. According to that consensus statement, contradicting the International Society of Minimally Invasive Cardiothoracic Surgery guideline from 2005,3 “endoscopic vein-graft harvesting cannot be recommended at present as it has been associated with vein-graft failure and adverse clinical outcomes.”4 The novel recommendation is largely influenced by the study published by Lopes et al in 2009.5 Limitations of this post hoc retrospective analysis of the Project of Ex Vivo Vein Graft Engineering via Transfection (PREVENT) IV trial should hinder one from drawing a conclusive attribution of negative outcomes to EVH, rather than to confounding factors. The study did not adjust for the use of off-pump coronary artery bypass grafting. The probability of graft failure was significantly higher in the off-pump group than in the on-pump group. Multiple randomized trials have shown that EVH significantly improves patient outcomes with the above-mentioned benefits without adversely affecting graft patency and survival.2 However, important limitations of many available studies are nonrandomization and lack of detailed operative data (eg, target vessels variables, surgical experience, endoscopic technique/device used, the exact level from which the vein has been taken, and vein preparation after harvest).

We believe that a vein harvested endoscopically by a correct technique, applying only minimal stresses to the vein, should result in a graft of equal quality. In this respect, EVH is technically more complex and might require more experienced technical skills. Traction stresses and heat-induced injury to the vein and its side branches caused by incorrect endoscopic handling may cause endothelial injury, predisposing to poorer graft patency rates.

The recent article by Dacey et al readdresses the current controversy and should encourage further studies comparing EVH with the open technique. In fact, there is little conclusive data on long-term graft patency rates after EVH. In our view, prospective randomized trials taking into consideration important confounding factors will be indispensable before clearer guidelines can be formulated in favor or to the disadvantage of EVH. Studies comparing the ultrastructural patterns of veins taken openly or endoscopically in order to uncover a possible mechanism by which patency rates are influenced should add further mechanistic evidence to the debate.

Disclosures

None.

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References


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