

Randomized trial of endoscopic versus open vein harvest for coronary artery bypass grafting: six-month patency rates

Yun KL, Wu Y, Aharonian V, Mansukhani P, Pfeffer TA, Sintek CF, Kochamba GS, Grunkemeier G, Khonsari S

Department of Cardiac Surgery, Kaiser Permanente Medical Center, Los Angeles, California, USA

Objective: We sought to compare the 6-month angiographic patency rates of greater saphenous veins removed during coronary artery bypass grafting with the endoscopic vein harvest or open vein harvest techniques.

Methods: Two hundred patients undergoing nonemergency on-pump coronary artery bypass grafting were prospectively randomized to either endoscopic vein harvest or open vein harvest. Follow-up angiography of all vein grafts was scheduled at 6 months. Graft patency and disease grades were assigned independently by 2 interventional cardiologists. Leg wound healing was evaluated at discharge, 1 month, and 6 months for evidence of complications.

Results: There were 3 conversions from endoscopic vein harvest to open vein harvest because of vein factors. Leg wound complications were significantly lower in the endoscopic vein harvest group (7.4% versus 19.4%, $P = .014$). On multivariable analysis, endoscopic vein harvest emerged as the only factor affecting wound complications (odds ratio, 0.33). Three

deaths (2 perioperative and 1 late) occurred in the endoscopic vein harvest group that were unrelated to vein graft closure. Twenty-four and 29 patients in the endoscopic vein harvest and open vein harvest cohorts, respectively, refused the follow-up 6-month angiography. Therefore a total of 144 angiograms (73 endoscopic vein harvests and 71 open vein harvests) and 336 vein grafts (166 endoscopic vein harvests and 170 open vein harvests) were available for analysis. The overall occlusion rates at 6 months were 21.7% for endoscopic vein harvest and 17.6% for open vein harvest. Additionally, there was evidence of significant disease ($>50\%$ stenosis) in 10.2% and 12.4% of endoscopic vein harvest and open vein harvest grafts, respectively. By means of ordinal hierarchic logistic regression, endoscopic vein harvest was not found to be a risk factor for vein graft occlusion or disease (odds ratio, 1.15). Significant predictors were congestive heart failure (odds ratio, 2.87), graft to the diagonal artery territory (odds ratio, 1.76), larger vein conduit size (odds ratio, 1.32), and graft flow (odds ratio, 0.90).

Conclusion: Endoscopic vein harvest reduces leg wound complications

compared with open vein harvest without compromising the 6-month patency rate. The overall patency rate depends on target and vein-related variables and patient characteristics rather than the method of vein harvesting.

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