

Pediced Vein Grafts in Coronary Operation: No-Touch Harvesting Under Pressure

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To the Editor of The Annals of Thoracic Surgery

In their recent study, Pettersen and colleagues present results of a randomized trial where saphenous vein (SV) grafts were harvested with pedicle intact (Ped) in coronary operations [1]. This is similar to Souza's no-touch (NT) technique, where the SV is removed with surrounding cushion of fat intact, a modification preventing vasospasm that occurs in conventional harvesting (CT), obviating the need for distension [2]. Using Ped, however, the surrounding tissue is "trimmed" and the vein distended "manually". At 6 months postoperatively Ped SVs had increased flow and lower intimal thickness than CT grafts with the conclusion that "even simpler no-touch" SV harvesting is beneficial.

Preservation of the SV pedicle is crucial to improved NT graft performance because no spasm occurs and distension is avoided. In Ped SV grafts it seems that distension was used purely to check for leakage. Our concern is that "manual" distension was used by "all surgeons". It is recognized that, unless measured, "manual" pressures may reach or exceed 700 mm Hg [3]. The authors suggest that manual distension may not harm Ped to the same extent as CT veins. Without histological examination, this is not supported. Furthermore, ultrastructural changes to endothelial and vascular smooth muscle cells of distended CT SV occur [4]—changes likely to happen where high pressures are used, even with "trimmed" pedicle intact. It is also proposed that the vasa vasorum of Ped SV remains intact. How can the authors be sure? This has been confirmed in NT SVs where retrograde blood flow of adventitial vasa vasorum has been demonstrated at removal of vascular clamps (see Fernandez-Alfonso and colleagues [5]). Also, NT SV segments perfused with India ink exhibit vasavasorum staining extending to capillaries within the perivascular fat, a source of factors possessing anticontractile and antiproliferative properties [5].

It is reassuring that Pettersen and colleagues appreciate the importance of perivascular tissue when using SV grafts. Using potentially high distension pressures, Ped SV grafts are likely to exhibit various degrees of vascular damage; this needs to be addressed. Whether the minor modifications described will improve their performance to the level shown long-term in NT SVs remains to be established.

References

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