


eComment: Sternal microcirculation following pedicled or skeletonized internal thoracic artery harvesting

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We read with great interest the recent review from Dr. Ali and coworkers [1]. Besides graft patency, sternal microcirculatory issues seem to favour skeletonized rather than pedicled internal thoracic artery (ITA) harvesting. Following pedicled conventional ITA harvesting, retrosternal capillary blood flow as well as retrosternal tissue oxygen saturation decrease significantly up to 50%, respectively [2]. In addition, pedicled ITA harvesting leads to retrosternal venous congestion. In case of experimental sternal infection in a porcine model, changes of microvascular sternal blood flow are evident depending on the applied pressure using vacuum-assisted closure (VAC) [3]. VAC has been suggested to stimulate blood flow in the peristernal region after ITA harvesting [4].

A clinical randomized trial compared pedicled vs. skeletonized harvesting techniques of the ITA with 24 consecutive patients enrolled [5]. Skeletonized ITA harvesting demonstrated significantly less deterioration of sternal microcirculation with improved tissue oxygen saturation. Thus, from a microcirculatory point of view, preserved internal thoracic veins facilitate venous outflow and diminish venous congestion, which otherwise might facilitate retrosternal infection in a clinical setting.

References


