


eComment: Is the inner diameter of radial artery reliable for its suitability as a graft?

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According to your study [1], one of the contraindications for radial artery harvesting is its small inner proximal and distal diameter, smaller than 2 mm (Tables 2 and 3 of the above study). This consideration is arbitrary and undocumented. The inner instantaneous diameter of the radial artery is the result of a dynamic and sensitive process, depending on the instantaneous vascular tone respectively. Especially for muscular type arteries such as radial, the vascular tone is very variable. On the contrary, large arteries modify their blood flow by increasing or reducing their internal diameter. Such a flow-dependent dilatation represents a fundamental mechanism that opposes the equivalent neurogenic and myogenic mechanisms that are activated during exercise vasoconstriction; in order to maintain sheer stress within physiological levels [2].

Factors such as the environmental temperature, muscular exercise, post-ischemia hyperemia, levels of endogenous or exogenous catecholamines, agonists, and heart failure result from time to time in a continuous variability of the radial diameter and wall thickness/diameter ratio. Giannattasio et al. [3] demonstrated that congestive heart failure (CHF) is characterized by a reduction of the inner diameter of muscular arteries, which is proportionally related too the severity of the disease. In addition, Boutouyrie et al. [4] reported that the radial artery in hypertensive patients was not dilated but was with a thicker wall, compared to the normotensive population. Thus, the wall cross-sectional area and wall/lumen ratio were markedly increased in hypertensive patients, factors that indicated the normalization of circumferential wall stress.

In conclusion, in patients with coronary artery disease (CAD) and simultaneously left ventricular dysfunction, or with hypertension, the estimation of normalization of circumferential wall stress.

References


eComment: Radial artery Doppler study in every case?

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We were reading the study performed by Kohonen et al. [1] with great interest and congratulate the authors for the additional research on radial arteries. The results give us some hints to predict radial artery availability for total arterial revascularization (TAR) once one side is not suitable.

But we want to raise the question: why not perform Doppler in every case, in spite of negative Allen test, for the case that the radial artery is small in caliber and would not be recommendable? Additionally, the Allen test has to be shown to be not always reliable for the assessment of collateral blood supply [2]. First, all patients should have a Doppler study done.

Second, in Caucasian populations elderly patients should be included since they are subject to controversy as to the age limit to perform TAR because of concerns about higher complication rates due to longer operation times, greater invasiveness of the procedure and the limited life expectancy of the cohort [3].

Some centers provide the opportunity for SV Doppler, which is equally crucial [4]. It has been shown that the diameter ratio (or discrepancy) of the graft vs. coronary target affects the long-term patency rate [5]. A Doppler study in every case should be employed to design the individual graft arrangement.

References


