Peripheral intervention before bypass surgery in the elderly: feasible and effective, but is it necessary?

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In this issue of the Journal of Geriatric Cardiology, Rigatelli and colleagues tackled the issue of concomitant non-coronary atherosclerosis among elderly patients undergoing cardiac surgery. Iliofemoral disease, renal artery stenosis, carotid stenosis, and even disease of supra-aortic vessels may variously impact the patient’s recovery from surgery. Also, the fact that involvement of two or more arterial beds are more common among the elderly makes this article all the more relevant at this time.

The message that the authors would like us to bring home is simple: percutaneous peripheral intervention prior to cardiac surgery, where indicated, is feasible, safe, and may reduce perioperative morbidity and mortality. Nevertheless, such conclusions may be premature given the very small number of patients reported in this case series. There are other limitations to the study; the patients involved were obviously drawn from a wider pool of patients undergoing cardiac surgery at the hospital over a 4-year period. However, there data were not shown. Neither were the methods for selection of these patients for percutaneous peripheral interventions. For example, did carotid arteries assessed in all patients planned for cardiac surgery, or limited to only patients with symptomatic disease (previous stroke and/or transient ischemic attack) and presence of carotid bruits? The criteria for elective intervention are also unclear.

Instead, we would like to highlight an alternative view point on the management of concomitant non-coronary atherosclerosis in patients undergoing cardiac surgery. We would also like to approach each arterial bed separately. Significant peripheral artery disease (PAD) occurs in about 10-20% of patients with multiple vessel coronary disease. Patients with concomitant PAD have longer length of stay in the intensive care unit and higher mortality post-operatively. However, performing angioplasty or stenting of aorto-iliac disease has not been shown to impact survival significantly. In addition, not all patients undergoing CABG required the support of an intra-aortic counter-pulsation balloon pump. Therefore, do we really need to intervene in all patients with significant aorto-iliac disease? Similarly, for patients with significant renal artery stenosis (RAS), previous case reports and series have confirmed that renal stenting is both safe and feasible. In the prospective data collected at Duke University on 798 patients undergoing CABG, where about 19% had significant single or bilateral RAS, the presence of RAS did not appear to increase the risk of developing acute renal failure post-operatively. Then there is carotid stenosis (CS). The gold-standard therapy for carotid stenosis is still carotid endarterectomy rather than carotid stenting. Although carotid stenting has been gaining popularity in recent years, its place in treating carotid disease is still limited to patients in whom endarterectomy is either not technically feasible, or of too high a risk, such as in patients undergoing CABG. Here again the biggest benefit of CS is for patients with ipsilateral severe disease and contralateral occlusion.

Returning to the paper by Rigatelli et al., during or following percutaneous intervention one patient developed upper limb ischemia, two suffered a transient ischemic attack, and one had contrast-induced nephropathy. Although none of these complications had any long term clinical sequelae, it would be premature to draw a conclusion from these results that the procedures are safe.

So what would we conclude from this study? We would say that peripheral percutaneous intervention is a viable option for the elderly patient prior to CABG. However, the need to perform these procedures must be discussed and defined, as the risks are present and the benefits not so clear for all patients with diffused atherosclerosis undergoing CABG. This is how Rigatelli and colleagues concluded as well.

References