Correspondence

Does the transradial route for percutaneous coronary intervention preclude the use of the radial artery as a conduit for CABG?

Dear Sirs

We read with interest the recently published article and subsequent letters concerning the radial artery as a preferred access site for percutaneous coronary interventions (PCI).[1] We think this debate should also include our cardiothoracic surgical colleagues.

Although the radial artery has been used as a coronary artery bypass conduit for over 30 years,[2] the initial results were disappointing due to problems with spasm and intimal hyperplasia and the technique was soon abandoned. With the availability of antispasmodic drugs and improved surgical techniques, the radial artery has once again become a popular conduit for coronary bypass grafting (CABG). However, the suitability of this conduit remains a subject of debate, with some studies reporting lower patency,[3] while others report higher patency[4,5] and reduced mortality when compared with saphenous vein grafts.[6] However, no high-quality randomised controlled trials exist.

Recently, there has been increasing use of the radial artery as the vascular access site for cardiovascular interventions, due to its increased safety[7] and patient satisfaction[8] when compared with a femoral approach, even following multiple cannulations. This benefit becomes increasingly important with the higher levels of anticoagulation used in acute coronary syndromes and myocardial infarction. Although transradial cannulation is thought to be relatively atraumatic to the radial artery proximal to the puncture site, there are concerns regarding the subsequent suitability of the radial artery as a bypass conduit.

Despite increased use of the transradial approach for coronary catheterisation, there are few data to answer the question of whether transradial catheterisation precludes the use of the radial artery as a surgical conduit. While clinically important complications appear to be uncommon, even after repeated transradial cannulation, occlusion rates of 5% have been reported, with diffuse intimal narrowing seen in a further 22%.[9] Another small study (67 patients) reported no histological evidence of endothelial denudation, thrombus formation or inflammatory responses in the radial artery after transradial catheterisation. However, compared with control arteries, there was an increase in intimal hyperplasia and a reduction in early graft patency, although no differences were noted in clinical outcome. This study looked at angiographic changes at one month following CABG and thus the true long-term outcome is not known.[10]

It is usual to use the right radial artery for transradial catheterisation, regardless of hand dominance, perhaps due to the predetermined set up of cardiac catheterisation laboratories. As the vast majority of patients (~80%) are right handed, the left radial artery is the more commonly used as a surgical conduit than the right. However, either due to non-dual hand circulation in the non-dominant hand or lack of venous conduits, the right radial artery remains an important option for CABG in a proportion of patients.

If patients are to continue to benefit from the safety advantages of the transradial approach to percutaneous cardiac procedures and also to have the best choice of conduit for CABG, then cardiac surgeons and cardiologists must work together to perform either a well conducted randomised control trial or work towards a collaborative registry which could answer these and other questions. This would be to the benefit of surgeons, cardiologists and, most importantly, patients.

Conflict of interest

None declared.

Yours faithfully

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