

SPECIALIST FOCUS

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8. Coronary artery calcium measurement can improve risk prediction in conventional intermediate-risk patients, and CACP scanning should be considered in individuals at intermediate risk for a coronary event (one to two per cent per year) for clinical decision-making with regard to refinement of risk assessment.

9. Decisions for further testing (such as stress testing or cardiac catheterisation) beyond assistance in risk stratification in patients with a positive CACP score cannot be made on the basis of coronary calcium scores alone, as calcium score correlates poorly with stenosis severity in a given individual and should be based upon clinical history and other conventional clinical criteria.

CT Coronary Angiography applications include: The Evaluation of Suspected Coronary Artery Disease

The strength of the technique lies in its high negative predictive value i.e. a normal coronary CT angiogram rules out the presence of coronary artery disease with a high level of certainty (>99 per cent). This is certainly useful in patients with an intermediate likelihood of CAD and an abnormal stress test (eg treadmill test), or symptoms suggestive of CAD. In such cases, a negative coronary CT angiogram rules out the need for further invasive testing such as conventional coronary angiography.

Use of CT angiography in asymptomatic persons as a screening test for atherosclerosis (noncalcific plaque) is not recommended.

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Most failures were due to failure to puncture the artery; in all cases, successful coronary cannulation was achieved on crossover to an alternative access route. Once arterial access had been achieved, the rates of successful angioplasty did not differ. Fluoroscopy and procedure times also do not differ.

Patient Preference

From the patient's perspective, transradial approach has many advantages. Post procedure, patients are more ambulatory. Patient can sit up after the procedure as opposed to having to lie flat for at least three hours in using the femoral approach. This is advantageous in patients with chronic back pain and benign prostatic hypertrophy leading to difficulty passing urine. Post procedure care is easier with no need for repeat groin inspections and ACT checks.



In Tan Tock Seng Hospital, I perform diagnostic angiograms almost exclusively via the transradial approach. Elective day cases can be discharged much earlier. Some centres have also moved to same day discharges for ad hoc

interventions via the radial approach.

Evaluation of Coronary Artery Bypass Grafts

Cardiac CT is able to evaluate graft patency with high accuracy (>99 per cent). This is useful when patients have symptoms post-CABG and there is clinical concern regarding the state of the coronary grafts.

Evaluation of Anomalous Coronary Arteries

Cardiac CT is a quick and reliable way of evaluating the course of anomalous coronary arteries. This is significantly easier in many instances than invasive angiography. Such patients can present with symptoms of chest pain or syncope.

Radiation doses, the reproducibility of results and the existence of validation studies must be taken into account when making a choice to perform a cardiac CT study. Serial coronary calcium scans to non-invasively assess progression rates of coronary calcium and CT angiography to assess non-calcified plaques are now starting to be reported, but the data is premature at this time. The most promising use of these technologies is calcium scoring for risk assessment of the asymptomatic individual, whereby elevated calcium scores may trigger more vigorous application of both lifestyle and/or pharmacological therapies targeted to lower cardiovascular risk and CT angiography to rule out the presence of coronary stenoses in certain subsets of symptomatic patients.

During a transradial procedure, patients usually remember only feeling the administration of the local anaesthetic and on occasion, a 'burst' of warmth on contrast injection. The entire procedure is painfree. What remains may be a residual tingling sensation in the arm.

This shows the compression of the radial artery puncture site using a Radistop device using a backslab and a compression block. It is typically removed two hours after application.

Patients generally prefer the transradial approach to the transfemoral approach because time to mobilisation, length of hospital stay, and costs are all reduced after transradial percutaneous coronary intervention.

Implications

The transradial approach has multiple advantages over the femoral approach and will be increasingly used as future interventionalists are trained in this approach.

