



GRAFTON NUCLEAR MEDICINE & BONE DENSITOMETRY



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All diagnostic imaging procedures and DXA scans are bulk billed

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Bone Scans for the Detection of Stress Fractures

Stress fractures can be difficult to differentiate clinically from arthritic pain. According to an article from the American Family Physician¹, X-rays generally are often obtained in the initial evaluation but may take 10 weeks to reveal a fracture. Despite repeat imaging in the convalescent phase fractures are only seen in up to 50% of cases. MRI or bone scanning is recommended if earlier or definite diagnosis is required.

A bone scan can detect 80% of fractures by 24 hours and 95% by 72 hours². A normal bone scan generally excludes the diagnosis of an occult fracture.



References

1. Am Fam Physician 2003; 68:1527-32
2. Thrall and Zeissman 2001. Nuclear Medicine: The Requisites. 2nd Edn.

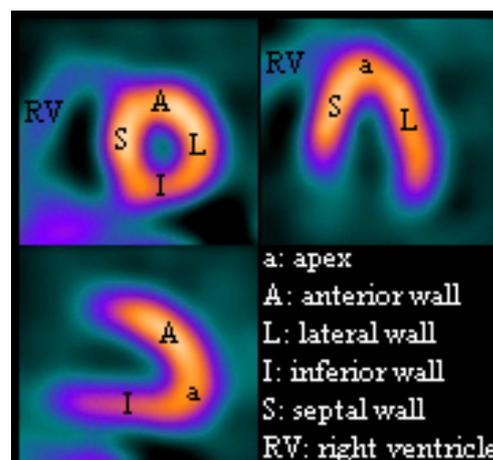
Sestamibi Myocardial Perfusion Imaging

Sestamibi myocardial perfusion imaging (MPI) has been the non-invasive cardiac imaging of choice for many years. MPI is able to detect haemodynamically significant ischaemia at the myocardial level. Two scans are performed — one at rest and the second following stress. An advantage of MPI is that it can be safely performed in both physically active patients and in those with limited exercise capacity. The stress study can be performed using a treadmill or a vasodilator for pharmacological stress, with similar results in accuracy. A normal study is highly reassuring in most cases, and can be used to screen patients with atypical symptoms who are at increased risk of heart disease.

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“the annual mortality and cardiac event rate is less than 1% during 5-year follow-up after a normal exercise sestamibi study”

- Elhendy et al. JNC 2003

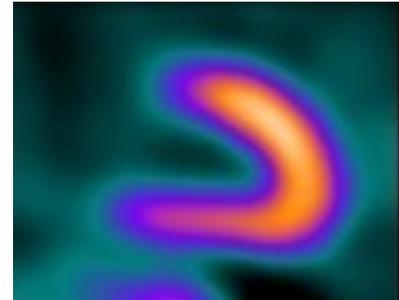


NUCLEAR MEDICINE

BONE DENSITOMETRY

THYROID ULTRASOUND

EXERCISE STRESS TESTING



(from pg 1)

The many benefits of myocardial perfusion imaging are well established:

- It is a non-invasive method of visualising blood flow to cardiac muscle.
- It can be performed both in ambulant and non-ambulant patients.
- It has a high sensitivity of 86%, and is far superior to conventional exercise stress testing¹.
- A completely normal exercise study makes the likelihood of significant ischaemic heart disease extremely low².
- It is safe in renal failure.

It complements anatomic imaging methods such as angiography which rely on an estimation of vessel stenosis to determine whether a diseased coronary vessel is haemodynamically significant.

Common indications for myocardial perfusion imaging are:

- Assessment of chest pain in the low to intermediate risk patient
- Determination of the clinical significance of known coronary artery stenoses (eg. is the 30-50% stenosis in the LAD actually causing symptoms?)
- Checking the patency of previous coronary stents and bypass grafts
- Prior to general anaesthetic for peri-operative risk assessment
- Screening or surveillance in high risk individuals. Some businesses make this mandatory for employees who have known ischaemic heart disease (eg. commercial truck drivers)

"Sestamibi" stands for hexakis 2-methoxy-2-isobutyl-isonitrile. The patient first receives an intravenous injection of sestamibi, which undergoes distribution via coronary arteries and is taken up by the myocardium. Any areas of reduced blood flow can be visualised on imaging. The patient is then placed under exercise or pharmacological stress, followed by repeat imaging.

References

1. Bax J et al. Cardiac imaging for risk stratification in diabetes. *Diabetes Care* 2007; 30(5): 1295-1304.
2. Elhendy A et al. Long-term prognosis after a normal exercise stress Tc-99m sestamibi SPECT study. *J Nucl Cardiol* 2003; 10: 261-266.

