

Importance of Myocardial Perfusion Scintigraphy in Coronary Artery Intervention



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Importance of Myocardial perfusion scintigraphy in significant Coronary artery lesion is well documented and has been a mandatory non invasive investigation in the present day clinical cardiac practice. We report the case of an asymptomatic 47 year old male with multiple areas of perfusion defects in the myocardium with evidence of adequate reversible ischaemia was put to vigorous life style changes with routine use of vasodilator for a period of two years has reversed the areas of perfusion defects to its normal pattern in the presence of significant multivessel lesions in coronary angiography.

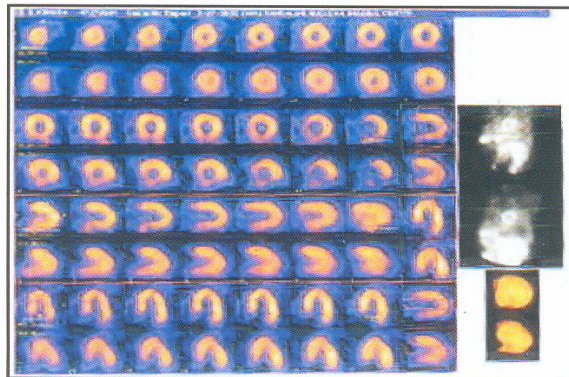
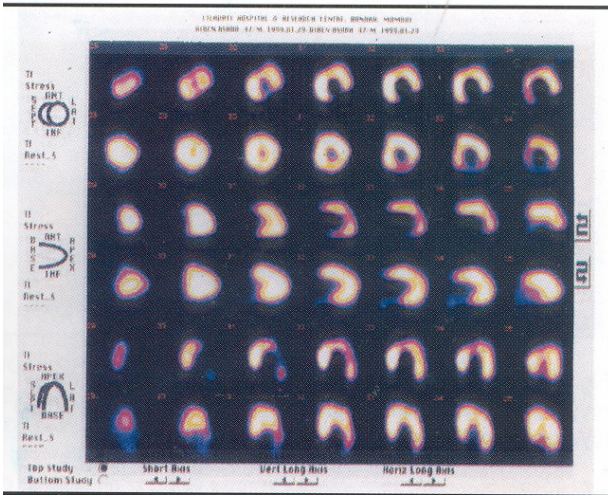
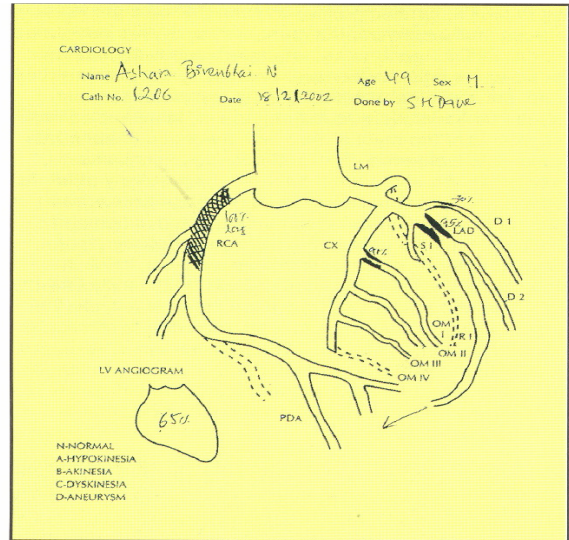
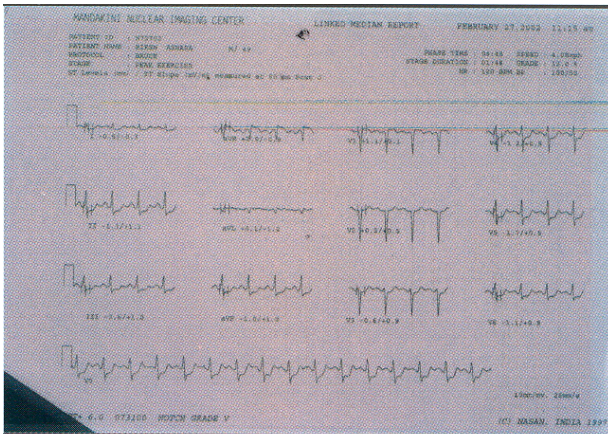
Keywords: Myocardial Perfusion Scintigraphy, SPECT, Gamma Camera, Coronary Artery Intervention, LVGEF (left ventricular global ejection fraction), stress perfusion defects.

Myocardial Perfusion Scintigraphy (MPS) is described as an accepted non invasive modality of investigation in patients suffering form coronary artery disease to assess the extent of myocardium involved and to have the evidence of the extent of reversible ischaemia or else the scar tissue which would/ would not benefit from myocardial revascularization . The importance of stress myocardial perfusion scintigraphy in the assessment of myocardial perfusion in patients suffering from significant coronary artery disease is well documented and is mandatory in all CAD patients.

Case Report

A 47 year old asymptomatic professional presented for myocardial perfusion scintigraphy to our centre for further evaluation of presence and extent of his coronary artery disease after reported ST depression

of 2.5 mm in II, III, avf & V5, V6 leads in treadmill Stress testing (fig 1). There was no history of past myocardial infarction not a known diabetic , hypertensive, no family history of CAD. Resting ECG shows equivocal ST depression in II, III, avf, V5, V6 leads. Lipid profile , cardiac profile and chest x-rays are normal. Stress Thallium myocardial perfusion scan performed under SPECT gamma camera interfaced with computer in a bicycle ergo-meter exercise table. The various stress and rest slices generated from the computer reveals stress perfusion defects in the postero lateral & inferior segments of the myocardium with evidence of adequate reversible ischaemia (fig. 2). Since the patient was asymptomatic and did not have any past history of MI he was put to coronary vasodilator and regular exercise schedule. After 2 years of continuous medications and change in lifestyle , he underwent coronary angiography which reveals diffuse lesion of 100% in proximal RCA, 95% proximal LAD , 70% D1, 95% Om1 of LCX with global ejection fraction of left ventricular 65% (fig 3). Subsequently he was again referred to our centre for a follow up stress gated SPECT myocardial perfusion scan which reveals uniform stress perfusion pattern in all the defined myocardial segments with LV global ejection fraction of 61% with no more areas of stress perfusion defects (fig. 4.)



Discussion

Importance of myocardial perfusion scintigraphy particularly in significant Coronary artery lesion is well documented (2). It is described as normal stress perfusion pattern in the defined myocardial segments in the presence of significant blockage in the coronary artery is due to opening of abundant collaterals (3). These opening of collaterals may be hastened up because of changes in the life style particularly due to exercise schedule and routine use of coronary vasodilator for a period of 2 or more years. As a result of which initial

areas of stress perfusion defect has been normalized to uniform stress perfusion pattern in the follow up perfusion scan. We therefore conclude vigorous life style changes with use of coronary vasodilators particularly in asymptomatic patients for a period of 2-3 years has opened up various collaterals leading to uniform stress perfusion pattern in all the defined myocardial segments causing normalization of the earlier stress perfusion defects which has ultimately prevented further coronary intervention.

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