

Keywords:

Introduction

Coronary artery disease (CAD) is a leading cause of mortality and morbidity worldwide. The diagnosis of CAD has traditionally relied on invasive techniques such as coronary angiography (CA) and non-invasive techniques such as stress testing and electrocardiography (ECG). However, the development of nuclear cardiac imaging techniques, such as positron emission tomography (PET) and single-photon emission computed tomography (SPECT), has provided a more comprehensive and accurate assessment of myocardial perfusion and metabolism.

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Discussion

Principles of nuclear cardiac imaging

Positron emission tomography (PET): PET is a nuclear cardiac imaging technique that uses a positron-emitting radiotracer, such as ¹⁸F-fluorodeoxyglucose (¹⁸F-FDG), to assess myocardial metabolism. The radiotracer is injected into the patient and taken up by the myocardium. The positron emitted by the radiotracer annihilates with an electron, producing two gamma photons that are detected by the PET scanner. The resulting PET image shows the distribution of the radiotracer in the myocardium, which is proportional to myocardial glucose metabolism.

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