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A CLINICOPATHOLOGICAL STUDY ON THE LOCATION OF MYOCARDIAL INFARCTION IDENTIFIED BY THALLIUM-201 SCINTISCAN

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Clinicopathological study was performed to evaluate the sensitivity & accuracy of the scintigraphic location of the myocardial infarction with Thallium-201. The scintiscans were obtained in five different views (right anterior oblique, anterior, left anterior oblique 30° & 60°, posterior). The location of the perfusion defect was classified into four parts (anterior, inferior, lateral, posterior).

There was mismatch of diagnosis in 24% between scintigraphic and ECG method. In 3 cases, no diagnostic ECG changes were observed in spite of the positive Thallium scan. In 8 cases of negative Thallium scan, ECG showed false positive readings due to abnormal ventricular activation pattern such as iCLBBB, left anterior hemiblock and OS pattern in V₁₋₄. At postmortem study in this group it was also revealed no evidence of myocardial necrosis. There was correlation of 90% between scintigraphic and postmortem diagnosis of myocardial infarction and poor correlation of 68% between ECG and postmortem findings. In our experience posterior wall MI is frequently difficult to be diagnosed. This is likely to be due to individual variation of the location of the posterior wall. Autopsy cases were scored of their coronary stenosis (1 for 10% stenosis, 5 for 100% stenosis). Eight cases with positive rest Thallium scan showed high total stenotic index (3 branch) of 11 as compared with 6 of the normal cases.

It is concluded that Thallium-201 scintigraphy could provide more precise location of infarction than ECG, especially in such cases as with abnormal ventricular activation pattern. The postmortem study revealed that myocardial perfusion defect in rest scan indicated the presence of 75% or more coronary stenosis.