

Tc-99m Labeled HMPAO white Blood Cell Scintigraphy in a patient with Hip Prosthesis

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Background

The ability to follow the distribution and migration of biologically active cells in human is essential for the development of cell-based therapies and diagnostics. Nuclear medicine imaging is widely applied in clinic as an attractive technique for in vivo WBC and stem cell tracking. The aim of this study was to evaluate prosthesis infection of a 51 years old man with previous history of hip prosthesis in the left side 17 years ago, and pain in the left femur since 7 months ago using ^{99m}Tc-HMPAO labeled WBC.

Methods:

After sterile isolation of patient's WBCs from RBC and Platelet, they were incubated with 30 mCi of ^{99m}Tc-HMPAO for 20 minutes. The labeled WBCs were isolated from ^{99m}Tc-HMPAO by centrifuge (450 g, 5 min) in sterile condition and reinjected to the patient. Planar Imaging was acquired (256 × 256 matrix, 5 min) two & four hours post injection.

Results:

Planar images showed no uptake on the left femur (suspicious to infection) which excludes the patient from surgery replacement of the prosthesis.

Conclusion:

Leukocyte scintigraphy with ^{99m}Tc-HMPAO has been a useful diagnostic method for three decades in the detection of bone infection, fever of unknown origin and suspicion of acute appendicitis.

Key Words: Leukocyte labeling, Hip prosthesis, ^{99m}Tc-HMPAO, Scintigraphy.

Poster Presentation

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