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SPECT Scan is useful to diagnose osteomyelitis in diabetic foot ulcer

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Background: Radiological diagnosis of osteomyelitis (OM) underneath the diabetic foot ulcer (DFU) is often difficult as x-ray changes are not sensitive. Bone scans does not give accurate anatomical diagnosis and interpretation may be difficult in the presence of underlying arthritis or Charcot neuroarthropathy. Single Photon Emission Computed Tomography (SPECT) bone scan can give accurate anatomical definition and activity of underlying bone.

Aim of Study: To explore the possibility of using SPECT scan to diagnose OM in DFU.

Subjects & Methods: 6 DFU subjects (mean age 58 years and 4 males) with clinical diagnosis of OM underwent SPECT scan. Clinical diagnosis was made on the basis of sausage toe deformity, positive bone probe and non-healing ulcer in the proximity of bone. In these subjects plain x-ray of foot did not show features of OM. SPECT scans were performed using technetium 99m HDP in all patients and Gallium 67 or Tc99m labelled mono-clonal Fab-fragments (leukoscan) when needed. First circulation, blood pool and delayed planar Tc99m-HDP images were taken.

Result: OM was confirmed in 5 (83.3%) cases. 1 ulcer healed with appropriate antibiotics, 4 are improving and 1 ulcer needed local amputation because of infective exacerbation.

Discussion: Our experience shows that SPECT is a valuable investigation for the accurate diagnosis of underlying OM in DFU. Accurate diagnosis helps in choosing appropriate antibiotics and determining the duration of treatment.