

PROSPECTIVE EVALUATION BY. MAGNETIC RESONANCE IMAGING  
(MRI) AND SINGLE PHOTON EMISSION COMPUTED TOMOGRAPHY  
(SPECT) IN ASSESSMENT OF POST -TRAUMATIC INJURIES OF  
TEMPOROMANDIBULAR JOINT

Hossam A. Kandil\* ; Sahar Hosny\*\* and Gihanne A. Omar\*\*\*

ABSTRACT

The use of SPECT in the assessment of post-traumatic changes in the temporomandibular joint has been infrequent, as compared with other radiographic techniques. SPECT have the potential to detect active bone remodeling whereas corresponding radiographs may be normal or document past structural change in the joint. Thorough examination of TMJ especially after trauma saves the patient from neglected treatment and further complications. This study was conducted on 24 joints of 12 adult patients (10 males, 2 females), who undergone 3dimensional computerized tomography (3D-CT) to confirm and define the location and direction of the fractured segments then they were sent for treatment. After one year-they were sent to do MRI and SPECT examination. The results of this study revealed high percentage (66.6) of displaced discs at the traumatized joints, also a considerable percentage of displaced discs in the unaffected joints. Small percentage (8.3) of the affected joints showed disc deformities. (91.6) of affected joints examined by SPECT were positive and gave high ratios of uptake, although 3 joints showed normal position and morphology on MR images. A considerable percentage (58.3) of unaffected joints gave positive results on SPECT. Similarly five joints of them were normal on MRI. Sensitivity and specificity of SPECT was 83 and 58 respectively. There was a statistical significance difference regarding count ratio of the affected and unaffected joints ( $P < 0.05$ ). It was concluded that 3D-CT technique produced images that allowed an improvement in the visualization of affected structures. The clinician should not rely on results of MRI alone specially if they do not correlate with clinical symptoms, but should consider another confirmatory technique which is more sensitive for detecting and staging osseous diseases of the TMJ related to disc dysfunction. SPECT can detect altered joint mechanics that are not evident at functionally anatomic MR imaging.

\* Assistant Professor, Oral Radiology Department, Faculty of Oral and Dental Medicine, Cairo University.

\*\* Lecturer, Division of Radiology, Diagnostic Sciences. College of Dentistry, King Abdulaziz University.\*\*

\*\*\* Lecturer, Oral Radiology Department, Faculty of Oral and Dental Medicine, Cairo University.