# SINGLE PHOTON EMISSION COMPUTED TOMOGRAPHY (SPECT): AN AID IN ASSESSMENT OF RECURRENT BENIGN AND MALIGNANT TUMORS IN MAXILLOFACIAL REGION

Zeinab Abdel Salam* , Hossam A. Kandil** , Adel Zein ElAbidine***

## ABSTRACT

Early diagnosis and complete resection of a tumor mass are the most important factors that improve prognosis and prevent recurrence. Single Photon Emission Computed Tomography (SPECT) is a recently developed technique for gathering and displaying nuclear medicine images. Ten patients were suffering from tumor recurrence were studied using panoramic radiography and SPECT. Results of this study revealed that lesion type, border definition, alveolar bone loss and teeth relation of recurrent benign and malignant tumors were clearly identified on panoramic radiographs with statistical significance difference (P<0.0001) compared to SPECT findings. Soft tissue involvement, vascularity, bone uptake and abnormal ratio were clearly identified on SPECT scan with statistical significance difference (P<0.0001) compared to panoramic radiographs. There was no statistical significance difference regarding bone affection, only one case was identified on SPECT scan and not on panoramic radiograph. We can conclude that SPECT complement rather than replace radiography, Periodic long-term radionuclide scanning should be recommended for all asymptomatic patients given the risk of residual and/or reactivating tumoral tissue with benign or malignant behavior, lastly, the size of the lesion on SPECT scan is exaggerated than the size on panoramic radiographs due to bone scanning gives the actual bone involvement which is very important in lesions of high recurrence for determination of the suitable safety margins to prevent recurrence.

## INTRODUCTION AND REVIEW OF LITERATURE

Cancer of the mandibular region usually has a poor prognosis, this is particularly due to invasion of the mandible, to reduce the consequences of poor treatment planning, careful preoperative assessment of bone infiltration is necessary, Zupi et al, 1996.

Single photon emission computed tomography (SPECT) is a recently developed technique for gathering and displaying nuclear medicine images. Its operation involves a gamma camera that rotates around the patient, generating circumferential projections. Axial tomographic slices approximately 6.5mm apart are then computed in similar fashion to computed tomography scans for x-ray images, Ortendhal et al., 1980.

SPECT is more sensitive and a valuable addition to bone scintigraphy. It removes from the di-

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