Spiral Computed Tomography Scan For Temporo-Mandibular Joint Bony Disorders

A Thesis

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ABSTRACT

This study was done on (40) patients having Temporo-mandibular joint bony disorders examined by spiral computed tomography scaner using somatom plus 4 siemens in The Nursing Home Hospital and Al-Shaheed Adnan Hospital from October 2001 to October 2002, to evaluate the value of each plane of spiral C.T. scan {axial, coronal, shaded surface display (SSD), sagittal multiplanar reformating (MPR)}, to identify the Temporomandibular joint bony disorders.

The age range of the patients was 3-68 years with a mean of 22.4 years.

The bony disorders of temporo-mandibular joint were classified into 6 groups:

1. Developmental group represents 7(17.5%) patients.

2. Traumatic group represents 10(25%) patients.

3. Functional group represents 16(40%) patients.

4. Degenerative joint disease group represents 3(7.5%) patients.

5. Infection: no patient belonging to this group.

6. Neoplsia group represents 4(10%) patients.

The computed tomography scanning results were evaluated for each group of the bony disorders. The value of each type of plane was assessed and given a grade, the grades were as follows:

1. **Developmental group:** coronal and shaded surface display(SSD) planes of great value to depict deformity in the condylar shape and changes in it's size, while axial and shaded surface display SSD is of no value to depict the deformity in the glenoid fossa.

2. Traumatic group:

A. Fracture of the condyle and glenoid fossa.

Coronal plane shows great value to detect the condylar fractures according to the anatomical location of the fracture, relationship of the condylar head fracture to the glenoid fossa, and association of the fractured condyle with fractured glenoid fossa.

Sagittal multiplanar reformating (SMPR) was of great value to depict the

nondisplaced fractures, axial plane is of no value to depict condylar neck. Also SSD was of no value to show fracture of the glenoid fossa.

B. Subluxation and dislocation.

In closed mouth position, coronal plane found to be of great value to show decrease in the intra-articular space ,while axial and shaded surface displays (SSD) were of no value .

In open mouth position, sagittal multiplanar reformating (SMPR) of great value to depict the relation of the condylar head to the articular eminence, while axial plane of no value and no need to do coronal scanning.

3. Functional (ankylosis).

Coronal plane was found to be of great value to depict type, bony extension on contralateral unaffected side of ankylosis, while shaded surface display (SSD) found to be of no value in depicting changes in the contralateral unaffected side, and the axial found to be of no value in depicting asymmetry of the joint space.

4. Degenerative joint disease:

Coronal plane found to be of great value to depict decrease in the intra-articular space, flattening of the condylar head, sclerosing in cortical bone, while axial and shaded surface display (SSD) is not identify these findings, so also Multiplanar reformating (MPR).

5. Neoplasia group:

No specific plane was of great value in depicting malignant and benign changes and all planes share in showing these findings.

Only shaded surface display (SSD) was of no value to depict internal bony destruction of the lesion, osseous changes and content of the lesion (blood, solid, cystic and calcification).