



ABSTRACT



Background: The temporomandibular joint is which connects the skull to the jaw bone and responsible for jaw bone movements. The etiology of temporomandibular joint disorder is multifactorial. When there is temporomandibular joint disorder it causes pain and restriction in jaw movements. Since the temporomandibular joint is interconnected primarily with muscles of mastication like masseter, temporalis, lateral pterygoid muscle, medial pterygoid muscle, and accessory muscles like digastric, stylohyoid, mylohyoid, and geniohyoid, it results in tenderness of the muscles. It also leads to referred pain in relation to the neck, shoulder and cervical muscles, which in turn resulted changes in head posture. In this study we evaluated postural changes in TMD subjects and comparing the results with healthy subjects.

Aim; To determine the Craniocervical posture in the TMJ disorders from True lateral radiographs in Asymptomatic and symptomatic patients and to compare the changes between the two groups.

Materials and Methods; The study was conducted in department of Oral Medicine and Radiology. The total sample size was 120. The sample was divided in to two groups, Asymptomatic and symptomatic group. And the symptomatic group was further subdivided in to three groups mild, moderate, and severe with 30 subjects in each group.

Healthy volunteers aged between 20-30 years diagnosed without TMD were included in group I and subjects aged between 20-50 yrs diagnosed with TMD

were included in group II and according to Laskin's criteria group II were further subdivided into mild (Group IIA), moderate (Group IIB) and severe (Group IIC). True lateral view was used as the imaging modality for the study. The angle and linear measurements were done in lateral radiographs with the help of the software Romexis. All the measurements were tabulated and statistical analysis was made using One way ANOVA (Post hoc) followed by Sheffi test.

Results and Discussion: A comparison of angle parameters like craniovertebral angle, cobbs angle, individual vertebral angle, and odontoid plane angle was done in both asymptomatic (Group I) and symptomatic group (Group II). There was a significant difference seen in craniovertebral angle, odontoid plane angle, and individual vertebral angles in group II when compared to that of group I.

Linear measurements like C1-C7 length, Opisthion-C7 length and Opisthion to intersection of CV angle and individual intervertebral spaces were done to cross verify the craniovertebral, odontoid plane angle and individual vertebral angle parameters which totally correlated the linear measurements. TMD had higher percentage in females when compared to males. But mean values of craniovertebral, odontoid plane angle and individual vertebral angles was higher in males when compared to female.

The results of our study revealed changes in craniovertebral, odontoid plane angle and resulted in hyperextension of the head in relation to the cervical spine. In order to cross verify the outcome of these both angles linear

measurements were made. Linear measurements like C1-C7 length, Opisthion-C7 length and Opisthion to intersection of CV angle totally correlated with the individual parameters. Individual vertebral angle showed significance in certain groups and in our opinion hyperextension, leads to greater amount of stress in other cervical vertebrae which causes excessive straining of cervical facets. According to the results of Individual vertebral angle C4 vertebrae was able to withstand greater amount of stress in all groups. Linear measurements of individual intervertebral spaces were measured to cross verify the result which totally correlated with it.

Since this study churned out a few unanticipated results, this can be considered as a forerunner for future studies in this field. We made use of available resources and techniques in our study, but still advanced techniques for assessing the cervical vertebrae and its impact on muscles can provide more insight to the postural changes, which is a very fascinating and prime aspect of health care.

Conclusion; This original study was carried out to assess the postural changes between the temporomandibular joint disorders and healthy individuals through lateral view radiographs. The results showed significant changes of the head in relation to the cervical vertebrae.

This study was a baby step to assess the changes associated with individual cervical vertebrae. The study was precipitous in exposing an important initial change (Dorsoflexion) as a compensatory efforts of the stomatognathic system, unlike what was hitherto presumed. The dorsoflexion we understand

is a front runner of the forward head posture which followed, and is anatomically, physiologically explained and logical.

Key words:

Temporomandibular Joint disorders, Temporomandibular Joint, Posture, Skull, Pterygoid Muscles, Masseter Muscles, Radiography, Mastication, Pain, Attitude.