

**APPEARANCE OF CONDYLE IN THE PANORAMIC  
RADIOGRAPH AND ASSESSMENT OF  
TEMPOROMANDIBULAR JOINT ON TMJ LATERAL  
TOMOGRAM IN PATIENTS WITH TEMPOROMANDIBULAR  
DISORDERS: A RADIOGRAPHIC STUDY**

By

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Dissertation submitted to the

Rajiv Gandhi University of Health Sciences, Karnataka, Bangalore

In partial fulfilment

of the requirements for the degree of

**Master of Dental Surgery**

In

7. 976

**Oral Medicine and Radiology**

Under the guidance of

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**Bangalore**

**April 2009**



SDMCDSLRC



T-00976

## ABSTRACT



### Background and objectives:

Temporomandibular disorders (TMD) are one of the common disorders affecting the adult population. The factors like psychological stress, eating habits, work pressure etc play a role in the pathogenesis of TMD. These predisposing factors are seen at an increased level in the present young adult population. It would be of great help if a diagnostic tool is available which can screen the subjects who are at a greater risk for developing TMD. The aim of the study was

- To evaluate the condylar appearance of patients with Temporomandibular Disorders (TMD) using a panoramic radiograph and lateral tomograms.
- To compare the condylar appearance of TMD patients and that of normal subjects on a panoramic radiograph.
- To compare measurements of joint spaces and their ratios in TMJ lateral tomogram of TMD subjects with that of normal subjects.
- To determine whether panoramic radiographs and lateral tomograms are useful diagnostic tools in TMD patients.

### Methods:

The study group consisted of 113 subjects of Indian origin aged between 18-45 years. These subjects were grouped into group I- Subjects with TMD and group II- Normal subjects with out any signs and symptoms of TMD. Panoramic radiograph and TMJ lateral tomogram was taken for these subjects. Radiographs were traced. Panoramic radiographs were assessed for osseous changes such as flattening of condylar surface, bone erosion, osteosclerosis and subcondylar cysts. TMJ lateral tomogram was used to measure anterior joint space, superior joint space, posterior joint space, condyle width, fossa depth, fossa width and eminence height. These measurements were used

to calculate ratios such as condyle position index, fossa width to condyle width ration, superior joint space to anterior joint space ration and fossa width to fossa depth ratio. This data was subjected to Chi-Square test, ANOVA test and logistic regression analysis.

### **Results:**

There was a significant correlation between the symptomatic and asymptomatic groups for the presence of osseous changes such as flattening of condylar surface, bone erosion, osteosclerosis and subcondylar cysts. There were differences in the different measurements of TMJ on TMJ lateral tomogram between TMD and control group subjects, but the measurements such as fossa width, fossa depth and eminence height showed statistically significant difference between TMD and control group. Statistically significant number of TMD subjects showed posterior position of condyle in the articular fossa of TMJ. Posterior position of the condyle may be an indicator of disc derangement. Statistically significant number of TMD subjects showed flatter and / or shallower articular fossa.

### **Conclusion:**

Panoramic radiographs can be used as a diagnostic tool to assess the condylar osseous changes in TMD subjects and also as a screening tool in asymptomatic subjects and TMJ lateral tomogram can be used to quantitatively assess the condylar position, shape and size of the articular fossa so that the asymptomatic subjects who give a history of the predisposing factors of TMD can be counseled about these factors which may make them more susceptible to develop TMD in future.