

ABSTRACT:

Background: The term "temporomandibular joint disorders" (or TMD) is a collective term used to describe a group of musculoskeletal conditions occurring in the temporomandibular region characterized by pain in the muscles of mastication, the temporomandibular joint, or both. Computed tomography (CT) has become an alternative to conventional radiographic methods because it facilitates a high quality image without superimposition as well as it provides 3D reconstruction and 3 dimensional analysis of the TMJ. Thus, enabling to determine the actual morphology and dimensions of the anatomical structures of the TMJ.

Aim & Objectives: To evaluate the craniofacial asymmetry in temporomandibular Joint Disorder (TMD) patients using 3D-computed tomography. To measure the mandibular ramus height, mandibular body length, mandibular length, maxillary height, Glenoid fossa height, Maxillary rotation, Mandibular rotation, Mandibular angle, Frontal ramal inclination, Lateral ramal inclination, Cant occlusal plane, Maxillary cant, Mandibular cant, Anterior and Posterior Glenoid fossa angulation, in temporomandibular joint disorder patients and healthy individuals. To compare the Asymmetry Index (AI) in temporomandibular joint disorder patients with control group.

Materials and Methods: Forty patients reconstructed 3D-CT models of adult subjects were measured to analyze craniofacial asymmetry. Subjects were divided into three groups depending on the presence (n = 20) or absence (n = 20) of joint sounds, and the results compared using the ANOVA test disc displacement, muscle disorders, and control group. The bivariate analysis compared asymmetry difference measurements between the three groups (with and without

TMJ).The bivariate analysis compared asymmetry difference measurements between the three groups (with and without TMJ).

Results: There was no statistically significant difference in age between study and control both groups. (p -value 0.858) The highest deviations found were mandibular ramus height, mandibular body length, mandibular length, maxillary height, glenoid fossa height, mandibular rotation, mandibular angle, lateral ramal angulation, cant occlusal plane, posterior glenoid fossa angulation, frontal ramal inclination.

Conclusion: craniofacial asymmetry can be used as an effective predictor for diagnosis of temporomandibular joint disorders which can be utilized in the management of this condition at an early stage.

Key words: Craniofacial asymmetry, Temporomandibular joint disorders, 3D-computed tomography.