

***Assessment of the correlation between
mandibular corpus axis and mandibular
plane in measuring mandibular growth
rotation in different skeletal classes
(A Cephalometric Cross sectional study)***

A Thesis

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Abstract

The growth rotations of the jaws play an important part in etiology of certain malocclusions and must be taken into account in planning orthodontic treatment. The concept of growth rotation is valid in the study of bone displacement, i.e. of the bone of mandibular corpus because it can be regarded as a rigid body. Indeed, with differential articular growth in the craniofacial complex the absence of rotatory displacement of bones would be inconceivable. However, in a study of position and inclination of bone contours which are affected by remodeling growth changes should be given in terms of changes in distances and angles.

This study is conducted to test the correlation between mandibular plane and corpus axis of the mandible in determining mandibular rotation and if the corpus axis could be used as alternative to the mandibular plane in measurements in different skeletal classes of malocclusion in Iraqi adult sample of (18-25) years of age.

The sample was collected according to certain criteria and consists of 120 lateral cephalometric radiographs of Iraqi adults patients (57 males and 63 females) attending the orthodontic department of College of Dentistry/ Baghdad University were selected prior to receiving any orthodontic treatment and the sample has been divided into three groups according the skeletal class type. Twenty eight variables (23 angular, 5 linear) were recorded. Statistical analysis of data was done by using computerized statistical programs of social science, loaded on Pentium four, to determine the descriptive & inferential statistics that gives the following results were found:

- ❖ All angular measurements have significant mean differences between skeletal class I, II and III groups, except for gonial angle, lower gonial angle, corpus axis angle and corpus-mandibular plane angle, the last angle reveals the stable relation between two planes.
- ❖ All the linear measurements have no significant differences between all skeletal classes, except for ramus ascending and mandibular base extent, which reveals the cause of skeletal class II, is due to mandibular deficiency.
- ❖ In all skeletal classes the mandibular corpus negatively correlated with mandibular plane angles to decrease the effect of mandibular plane rotation on the dentoalveolar structures.