Cephalometric analysis of craniofacial deformity of β-Thalassemic Major by using Computed Tomography.

A thesis

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ABSTRACT

Background: Thalassemia is a hereditary anemia resulting from defects in hemoglobin production. β-Thalassemia caused by decrease in the production of β -globin chains affect multiple organs and is associated with cranio-oro-facial deformity which include prominent cheek bones and protrusive premaxilla with depression of the nasal bridge often referred to as "rodent or chip-munk face" with small mandible and Cl.II skeletal relationship.

Computed Tomography provides a volume rendered image of the skull that can be evaluated in any plane enabling accurate appreciation of the real shape of the skull, jaws, and facial bones and allowing precise measurement of the relationship between them.

This advantage of the 3 dimension images has a special importance in cases of craniofacial or orofacial anomalies.

Aim of the study: To investigate cephalometric craniofacial parameters (skeletal) of β -thalassemic major patients by using computed tomography and to compare findings with a group of healthy patients in the same age group.

Subject, Materials and Method: The study included (40) patients with β -thalassemic major (20 female and 20 male) with age 8-15 years compared with (40) healthy controls (20 female and 20 male) with the same age, who admitted to spiral computed tomography scan unit in X-ray institute in AL-KARKH general hospital to have computed tomography scan for the brain, paranasal and for orthodontic purpose from October 2011 to June 2012.

Cephalometric analysis of the selected six skeletal linear measurements and four skeletal angular measurements, by using direct analysis with

software programs in a computer which is part of the computed tomography machine.

Results: There was no statistically significant difference between thalassemic males and females in all selected skeletal linear and angular measurements.

-Thalassemic patients have a highly significant large ANB angle and cl II skeletal relationship.

-Thalassemic patients have a significant larger gonial angle.

-Mandibular base length (Me-Go) is significantly shorter in thalassemic patients.

-Retrognathic mandible (SNB) is significantly decreased in thalassemic patients.

-Thalassemic patients have a highly significant shorter in total anterior facial height (N-Me) and total posterior facial height (S-Go).

-Ramus height is highly significant decreased in thalassemic patients.

Conclusion: In thelassemic patients, the skeletal morphology is recognizable and mandible is retrognathism and they have skeletal cl. II pattern and Computed tomography is useful tool for assessment of the cranio facial measurement.