Evaluation of the relationship between curve of Spee and dentofacial morphology in different skeletal patterns

A thesis submitted to
the council of the College of dentistry at the University of Baghdad, in partial fulfillment of the requirements for the Degree of Master in science of Orthodontics.

By:
Hasan Jameel Kazem Al-Amiri
B.D.S.

Supervised By:
Assist. Prof. Dr. Dhiaa Jaafar N. Al-Dabagh
B.D.S., M.Sc. (Orthodontics).

Baghdad-Iraq

April 2014 A.D. Jumada Althani 1435 A.H.

Abstract

Curve of Spee is an anteroposterior anatomical curve established by the occlusal alignment of the teeth viewed in the sagittal plane. This occlusal curvature has clinical importance in orthodontics and other fields of dentistry. Orthodontists deal with the curve of Spee in nearly every patient they treated.

This study aimed to assess the relationship between the curve of Spee and dentofacial morphology of different skeletal patterns in both gender.

The sample consisted of "86" Iraqi Arab subjects (44females,42 males) their age ranged from 17 -30 years, classified as following:- Skeletal I with normal occlusion(15 females and 15 males), Skeletal II with class II div 1 dental malocclusion (15 females and 15 males) and Skeletal III with class III dental malocclusion (14 females and 12 males).

By measuring (41) variables in different methods using direct dental cast measurements , dental cast photographs and cephalometric radiographs with the aid of AutoCAD program version 15 (2006) the following results were obtained:-

No significant differences were found in the curve of Spee depth between males and females or between right and left sides in both arches of different skeletal patterns,

the curve of Spee, in different skeletal patterns was concave in the mandibular arch with the maximum concavity at the mesiobuccal cusp tip of the mandibular first molar and convex in the maxillary arch with the maximum convexity at the buccal cusp tip of the maxillary second premolar. No significant differences in the maxillary curve of Spee were found among the 3 skeletal patterns, while the mandibular curve of Spee in class II div 1 malocclusion was larger than normal occlusion and class III malocclusion.

The only significant skeletal measurement that correlated to maxillary curve of Spee was the Frankfort mandibular plane angle in skeletal II**.** Maxillary curve of Spee significantly correlated to arch length, inter canine distance and inter second premolar distance in normal occlusion and overbite in Class III malocclusion.

Mandibular curve of Spee significantly correlated with overbite and overjet in class II div 1 and Class III malocclusions.