

**A Cephalometric Study of Sella  
Turcica Size and Morphology among  
Young Iraqi Normal Population in  
Comparison to Patients with  
Maxillary Malposed Canine**

**A thesis**

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## **Abstract**

Sella Turcica is a bony depression located in sphenoid bone that houses and protects the pituitary gland. Calcification of the interclinoid ligament of the Sella Turcica, or Sella Turcica bridging, has been associated with severe craniofacial deviations and dental anomalies.

The permanent canines are the foundation of an esthetic smile and functional occlusion. It is the most commonly ectopically erupting permanent teeth after maxillary third molars, so an attempt to guide impacted canines into functional occlusion should be made.

The aims of this study were to establish normative reference standards of Sella Turcica size in Iraqi sample that could assist in a more objective evaluation and detection of pathological conditions and for comparative purposes with other nationalities and races, secondly to compare the size measurements of Sella Turcica between normal subjects and patients with buccally and palatally malposed maxillary canine, and third to evaluate the prevalence of Sella Turcica bridging in young subjects with malposed canine in comparison to subjects with normal canine position using Lateral Cephalometric Imaging.

Lateral Cephalometric Images for 40 subjects (18 male and 22 female), aged between 13 and 25 years, with displaced or impacted canines were collected from July 2010 to January 2011 and compared with a control group (60 male and 60 female), the control group were with normally erupted canines. The size of Sella Turcica (length, depth and diameter) was measured and the bridging was evaluated.

The results show that mean length, depth and diameter in control group were (9.22mm, 7.56mm and 11.56mm) respectively and in malposed canine cases (8.22mm, 7.86mm and 11.45mm) respectively. Images with malposed canine had

a statistically significant smaller length of Sella Turcica by mean of 0.85 mm compared to control group, no significant differences in linear measurements between genders. Sella Turcica length was the only variable found to be significantly different between skeletal classes in malposed canine group (it was higher in skeletal class I relationship), Depth of Sella was the only variable found to be significantly different between the ordered four age groups, being larger in older age group.

The prevalence of Sella Turcica bridging was higher in subjects with malposed canine (70%) compared to (28.3%) in the control group. The association between the degree of bridging and the presence of malposed maxillary canine in the studied subjects was statistically high significant, Male gender was associated with a statistically significant positive effect on bridging magnitude compared to females, The youngest age group (13-15 years) was associated with a statistically significant decrease in bridging magnitude compared to older age group (22-25 year). There is a statistically non-significant difference in median grade of Sella Turcica bridging between buccal and palatal displaced canine cases.

All linear measurements of Sella Turcica were within standard range. There is a clear tendency towards a greater frequency of Sella Turcica bridging in subjects with malposed maxillary canine. Early appearance during development of a Sella Turcica bridge should alert clinicians to possible tooth anomalies in life later.