

**Assessment the Relationship between Maxillary  
Sinus Floor and Maxillary Posterior Teeth Root  
Apices Using Spiral Ct Scan**

A thesis

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# Abstract

**Background:** The maxillary sinus varies in its extension. It is essential to understand the anatomic relationship between the maxillary sinus floor and the roots of the maxillary posterior teeth for planning preoperative treatments for maxillary posterior teeth.

**The aims of study:** The purpose of this study is to investigate the relationship between the roots of the maxillary posterior teeth and the maxillary sinus using computed tomography, and measured the distances between the roots of the maxillary posterior teeth and the sinus floor.

**Materials and Methods:** The sample of the present study was a total of 120 Iraqi subject (60 males & 60 females) aged( 20-60) years old, who admitted to spiral Computed Tomography scan unit in AL-Zahraa hospital in AL-Kut city to have Computed Tomography scan of the brain and paranasal sinuses who had complaints of headaches or with suspicion of sinusitis but without pathological findings in maxillary sinuses . From November 2012 to April 2013, CT sagittal reconstructed images were used in this study, Images were classified according to the relation between the root apices and the maxillary sinus floor into type1: Root apices below the sinus floor, type 2: Root apices in contact with the sinus floor) and type 3: Root apices penetrate or inside the sinus floor. Vertical distance were measured between the deepest point of the maxillary sinus floor and the root apices of the maxillary first and second premolars and first, second molar using built-in measurement tools. Means, standard deviations and minimum and maximum values were calculated for all right and left premolars and molars. T-tests were used to compare measurements between left and right sides and between female and male patients.

**Results:** The distance between sinus floor and root apex was longest for the first premolar root apex and shortest for the second molar mesoibuccal root apex for

both right and left sides. No statistically significant differences were found between the right and left side measurements or between female and male patients.

**Conclusion:** There was no significant difference in vertical relation of maxillary posterior teeth to floor of maxillary sinus between male and female and between right and left side.

The mesiobuccal root of the maxillary 2<sup>nd</sup> molar was closest to the maxillary sinus floor and palatal root of 1<sup>st</sup> premolar was farthest to the sinus floor.