

Abstract

Understanding the relationship between the maxillary sinus and the location of the roots of the maxillary molars plays an important role in the diagnosis of sinus diseases and periodontal and periapical infections of the maxillary molars that have the potential to spread to the sinuses; Therefore, the aim of this study was to investigate the relationship between maxillary sinus and maxillary molars's location in panoramic and CBCT radiography.

Goals:

The aim of this study was to evaluate the relationship between maxillary sinus and root location of maxillary molars in panoramic and CBCT radiography

Materials and Methods:

The study will be performed on 300 panoramic and CBCT samples taken from patients referred to Rad Radiology Clinic. The relationship between maxillary sinus and maxillary molars's location in panoramic radiography and CBCT is classified into five standard classes and examined in the first, second and third molars. The results obtained by Chi-square, Fi and Kramer tests at 5% error level with SPSS software 22 is analyzed.

Findings:

There was no significant difference between the first and second maxillary molars and out of 535 cases, 463 cases had the same results in both radiographs, in 36 cases the difference between CBCT and panoramic radiographs was negative and in 36 cases this difference was positive. However, in the case of the third maxillary molar, out of 286 cases, 232 cases had the same results in both radiographs, in 10 cases the difference between CBCT and panoramic radiographs was negative and in 44 cases this difference was positive. In general, the results of the symptom test showed that there was a significant difference in the results of the two types of radiographs ($P = 0.001$). This suggests that the two-dimensional panoramic image may have technical errors that have misinterpreted our images, and this indicates the need to use CBCT as much as possible for surgery in the area of the third molar.

Conclusion:

Due to the low compatibility of panoramic radiography and CBCT in examining the relationship between the roots of the upper posterior teeth, especially the third molars and the floor of the maxillary sinus, in cases where root-to-sinus protrusion is observed, in posterior maxillary surgeries such as sinus lifting, posterior teeth extraction And apical surgeries as well as orthodontic movements of the teeth when CBCT is prepared in panoramic radiographs of root protrusion into the sinus for accurate evaluation and risk of posterior maxillary pneumatization.

Keywords

Maxillary sinus, Root location, Panoramic radiography, CBCT