

Dimension Of Maxillary Sinus In Thai Patients Detected By Cone-Beam Computed Tomography

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Abstract

Objective: Since size and volume of maxillary sinus are varies between ethnicity and are an important predictor of overall health of this sinus. This research will study normal variation and measure the volume and size of maxillary sinus in Thai patients by Cone Beam Computed Tomography (CBCT).

Materials & Methods

InVivo dental 5.0 software (Anatomage, San Jose California USA) was used to analyze 344 CBCT radiographs from i-CAT machine (Imaging Sciences International, Hatfield, PA, USA). All data was analyzed in relationship to age, sex and interzygomatic buttress of the patients by using IBM SPSS 20.0 for window (SPSS Inc., Chicago, IL). Reproducibility of volumetric and morphometric measurements on maxillary sinuses by observers were evaluated.

Results

The mean volume of the maxillary sinuses in Thai patient on the left and right side were 17.16 cm³ (s.d. 5.52) and 17.43 cm³ (s.d. 5.35) respectively, (P>0.05). No gender and age differences were observed (P>0.05). The mean transverse and anteroposterior widths of the normal adult maxillary sinuses were 31.25 (s.d., 4.39) mm and 38.15 (s.d., 4.22) mm. consecutively. There was a positively strong correlation of sinus volume and the size of interzygomatic buttress (r=0.5). The mean height of the adult maxillary sinus floor was 11.28 mm (s.d. 4.21) inferior to the anterior nasal spine. The perfect agreements of intra- and interexaminer reliability were shown (ICC 0.997-0.882). 1

Conclusion

Thus, the measurement of sinus volume by using CBCT is a feasible method that can be used in large population with high reproducibility. As the result, the first baseline data of size and volume of normal maxillary sinus in Thai patient were achieved in this study and provided the basis for further study involving the maxillary sinus.11