SDM
College of Dental Sciences & Hospital
Dhavalnagar, Sattur, Dharwad - 580009, Karnataka, INDIA
Recognised by Dental Council of India, New Delhi

SHRI
DHARMASTHALA
MANJUNATHESHWARA
UNIVERSITY

ASSOCIATION OF ANATOMIC STRUCTURES OF MAXILLARY SINUS WITH PATIENTS' AGE, GENDER, DENTULOUS STATE AND DENTAL PATHOLOGY: A RADIOGRAPHIC STUDY

By

Sangamesha A. Bevinagidad

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College of Dental sciences and Hosiptal

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Objective: To evaluate the presence of anatomic features and variations of the maxillary sinus with the age of the individual, dental status and presence of pulpal or peri-radicular pathologies using Cone-Beam computed tomography (CBCT) of maxillary sinuses.

Material and methods: This retrospective study evaluated a sample of 250 consecutive CBCT examinations. The inclusion criteria were CBCT scans of the maxilla of healthy patients showing the complete base of the lower third of maxillary sinus. The CBCT exams were evaluated by periodontist who assessed the dental status, pneumatization, sub-sinus bone height, antral septa, mucosal thickness, continuity if sinus wall and peri-apical changes with relation to 2nd premolar, 1st and 2nd molar of the maxillary sinus.

Results: The anatomic variations detected were pneumatization (87.6%), antral septa (43.9%), discontinuity of sinus wall (12.5%), mean sub-sinus bone height (SBH) is 12.9 mm for 2nd premolar, 9 mm for 1st molar and 9.2mm for 2nd molar. The mean mucosal thickness is 2 mm for both 2nd premolar and 1st molar and 1.8 mm for 2nd molar.

Conclusion: Anatomic variations and lesions of the maxillary sinus were common findings in CBCT examinations of the maxilla required for dental implant planning. As some of these conditions can modify dental implant planning and must require specialized treatment, its recognition is noteworthy in dental practice, and especially in implantology. The amount and significance of the anatomic variations and lesions detected in this study reinforces the importance of computed tomography in preoperative dental implant planning.

Keywords: Maxillary sinus analysis, Maxillary sinus augmentation, Maxillary sinus lesions, Maxillary sinus variations, Sinus mucosal thickness, Pneumatization, Antral septa, Sub-sinus bone height, Indian population, Dental status and Maxillary sinus, Pulpal pathology.