

## VALIDITY OF TRIDIMENSIONAL CT STUDY OF MAXILLARY SINUS RECONSTRUCTION IN POTENTIAL IMPLANT SITE

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### ■ ABSTRACT

Twenty one adult patients (30-50 years) of both sexes, bilaterally or unilaterally edentulous patients were selected from candidates for implant insertion. Multislice CT scan was carried out using multislice CT (MSCT, Somatom Sensation 16 slice machine (Siemens) with Syngo system and VB10B software. Buccolingual bone width, remaining bone height, and the angulations of the maxillary sinus floor were measured at the potential implant site. The total maxillary sinus volume and the inferior sinus volume needed to be grafted in the potential implant site at 5mm, 10mm and 15mm were measured. Results showed that bone height ranged from 0.33 to 1.7 cm with SD 0.37, and bone width ranged from 0.65 to 1.14 cm with SD 0.11 at the potential implant site. Significant difference was observed between the angle of the inner wall of maxillary sinus in bicuspid (mean 25.82°) and first molar region (mean 42.22°). The study recommends the use of combination of multi slice CT and 3D volume rendering techniques using computer graphics systems for establishment of the potential buccolingual position and inclination of the respective implants, and allows the measurement of the amount of bone present and bone graft needed for sinus lifting.

### ■ INTRODUCTION

To be a candidate for the dental implant procedure, a patient must have sufficient amount of maxillary or mandibular alveolar bone to support these posts. Unfortunately, after a prolonged period of being edentulous, the alveolar ridge that once supported the teeth becomes atrophic and sufficient bone may not be present for implants (Velloso, et al 2006). Pneumatization of the maxillary sinus cavity after dental extractions;

consequently, reducing even more, the available bone height for implants. Pneumatization of the sinus varies greatly from person to person and even from side to side (Van den, et al 2000). Furthermore, in this area, bone density was found less favorable for placement of endosseous implants (Jaffin, et al 1991).

Sinus pneumatization was identified after extraction of maxillary posterior teeth (Ulm, et al 1993). The expansion of the sinus was larger following extraction