



SMART DENTAL UPDATES

Vol 2 | Issue 21 | 2021

Dear Doctor,

Greetings from Micro Labs Limited. We are happy to bring you “**SMART DENTAL UPDATES**” which contains latest and interesting news in the field of Dentistry.

This issue contain

- Maxillary Bone in the Anterior Esthetic Zone for Immediate Implant Placement: An Observational Cone beam Computed Tomography Study.
- A Cross Sectional Study of Labial Bone and Covering Soft Tissues in Maxillary Anterior Segment.
- Compound Odontoma Removed by Endoscopic Intraoral Approach.
free to contact us at medicalsolutions@microlabs.in

Looking forward to your valuable feedback

Best Regards,
Medical Team, Micro Labs Limited



SMART DENTAL UPDATES

Vol 2 | Issue 21 | 2021

Maxillary Bone in the Anterior Esthetic Zone for Immediate Implant Placement: An Observational CBCT Study

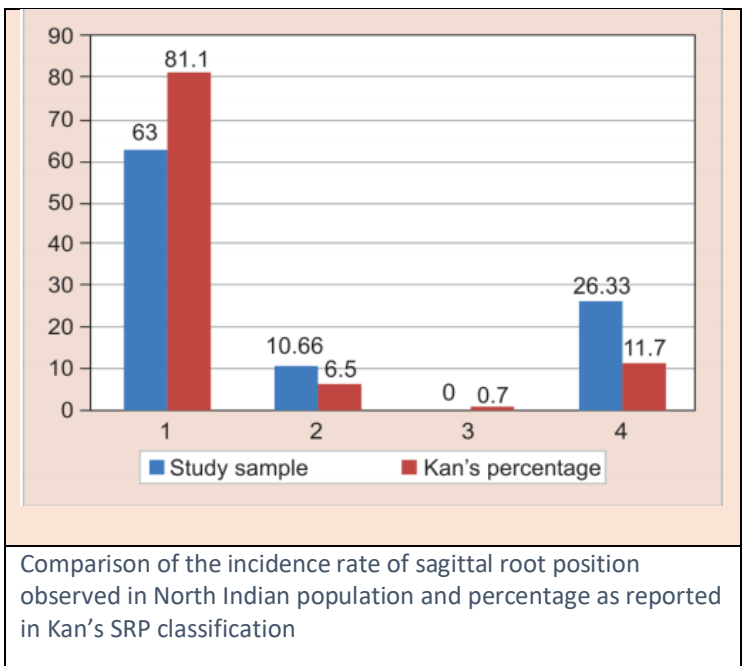
Immediate implant placement is a popular treatment option with both clinicians and patients with a high cumulative survival rate of 92–100%. The advantage of this technique is it increases subject satisfaction, reduces treatment time and treatment acceptance.

The objective of this study was to check the validity and reliability of Kan's classification on the North Indian population which would provide a guideline for immediate implant placement in the anterior esthetic zone.

In this observational study, cone-beam computed tomography (CBCT) images of subjects was done to assess the sagittal root position of central incisors, lateral incisors, and canines in relation to the alveolar bone following Kan's classification. Forty two male and 58 female subjects between the ages of 20 years and 60 years were selected. All six maxillary anterior teeth intact with no sign of infection, fracture, internal resorption, or any other trauma and with at least

two occluding posterior teeth in each quadrant were included in this study. Sample size along maxillary anterior teeth was 600 with 200 central incisors, 200 lateral incisors and 200 canines.

Class I showed 63% frequency of sagittal root position in anterior maxilla, compared with 81.1% reported by Kan. Class II was 10.66% when compared with 6.5% in Kan's





SMART DENTAL UPDATES

Vol 2 | Issue 21 | 2021

reporting. Class III root position was not observed in any of the teeth. Sixty-three percent of central incisors were in Class I position, 11% in Class II, 26% in Class IV, and none in Class III. The maximum difference was observed in the position of the central incisor in the Class IV.

Comparison of the overall result		
Sagittal root position	Overall percentage in study sample [Percentage (no.)]	Overall percentage as reported in Kan's SRP classification (no.) [Percentage (no.)]
Class I	63 (378)	81.1 (487)
Class II	10.66 (64)	6.5 (39)
Class III	0	0.7 (4)
Class IV	26.33 (158)	11.7 (70)

In conclusion, this study showed the importance of CBCT for predictable treatment planning in the esthetic zone. To assess the root length and morphology and make evidencebased decisions, keeping in mind that Class I and Class IV are commonly found sagittal root positions in the North Indian population cross-sectional images of anterior teeth before planning an immediate implant are a must.

Reference: Phogat S et al. Evaluation of Maxillary Bone in the Anterior Esthetic Zone for Immediate Implant Placement: An Observational CBCT Study World J Dent 2021;12(4): 311–315.



SMART DENTAL UPDATES

Vol 2 | Issue 21 | 2021

A Cross-Sectional Study of Labial Bone and Covering Soft Tissue in Maxillary Anterior Segment

The purpose of this study was to evaluate the buccal bone thickness and covering soft tissue in the maxillary anterior segment.

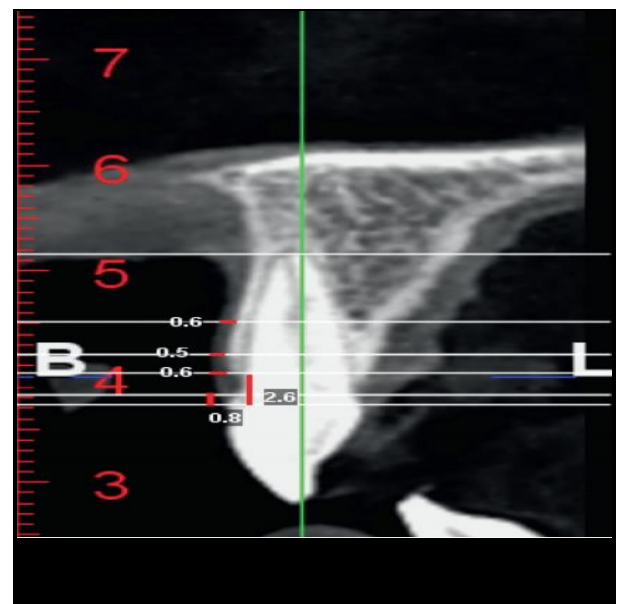
In this cross-sectional study, a minimum of 68 subjects were included. In the maxillary anterior segment, the buccal bone and soft tissue thickness was examined in 80 cone-beam computed tomography (CBCT) images of the subjects aged 16 to 67 years. Using Planmeca with 80 * 110 mm FOV (Field of View), voxel resolution of 150 µm, and Romexis software all the CBCT radiographs were prepared. The hard tissue thickness was measured in sagittal plan, in 3 different areas, at 2 and 5 mm more apical from the crest and at the root apical apex, as well as the distance from the CEJ to the alveolar crest.

The subjects were investigated in three age groups of less than 30 years, between 30 and 40 years, more than 40 years to assess the impact of age on bone loss and the thickness of soft tissue. ANOVA, t-test, and Pearson correlation was used to investigate associations or statistically significant differences between parameters.

Highest mean thickness at the 5 mm level was related to central incisors and the lowest was related to canine, which was statistically significant.

In soft tissue crest level and soft tissue level 2 mm from crest was related to central incisors and the lowest mean thickness at these levels was related to canine, which was not statistically significant.

The highest mean FG-C (free gingiva) was for



Sagittal section of lateral incisors (measurement of the thickness of buccal soft tissue at crest levels, 2 and 5 mm from the crest, and (FG—CEJ, FG—C distance).



SMART DENTAL UPDATES

Vol 2 | Issue 21 | 2021

lateral incisors and the lowest mean was related to central incisors, which was not statistically significant. Analysis of hard tissue variables showed the lower thickness of hard tissue at higher ages compared to the young patients group, but the thickness of the soft tissue increases with age.

Correlation of hard and soft tissue thickness in maxillary anterior segment based on tooth and quadrant			
Quadrants	Teeth	The degree of correlation at the 2 mm level from the crest (P value)	The degree of correlation at the 5 mm level from the crest (P value)
Right	Central	0.465 *(<0.001)	0.157 (0.165)
	Lateral	-0.02 (0.858)	0.156 (0.166)
	Canine	0.084 (0.460)	0.250 *(0.025)
Left	Central	0.272 *(0.015)	0.167 (0.140)
	Lateral	0.128 (0.258)	0.184 (0.102)
	Canine	-0.124 (0.272)	0.344 *(0.002)

In conclusion, highest mean thickness of the buccal hard tissue in the maxillary anterior segment was in lateral and central incisors. Also, the most prominent thickness of the labial soft tissue was in the central and lateral incisors at levels close to the crest.

Reference: Yousefzadeh S, Johari M, Sheikhzadeh S, Haghanifar S, Gholinia H, Arbabzadegan Hashemi N. A Cross-Sectional Study of Labial Bone and Covering Soft Tissue in Maxillary Anterior Segment: A Dilemma in Orthodontics. International Journal of Dentistry. 2021 Jul 12;2021.



SMART DENTAL UPDATES

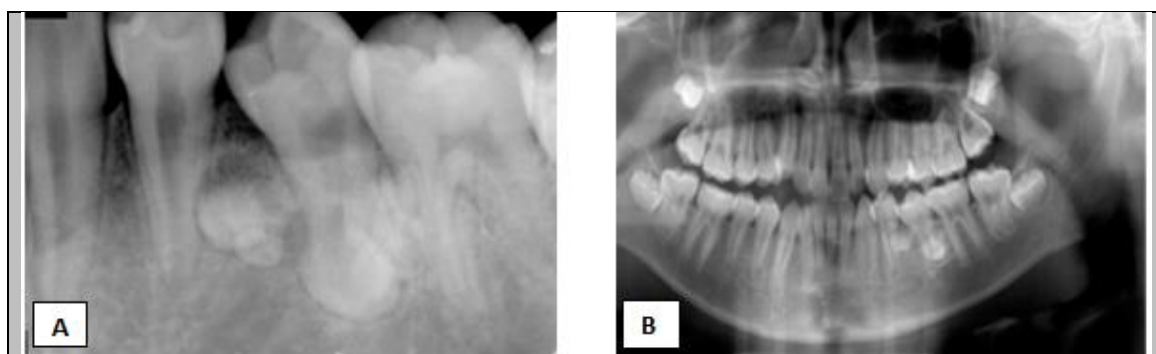
Vol 2 | Issue 21 | 2021

Compound Odontoma Removed by Endoscopic Intraoral Approach: Case Report

Patient Description: A 12-year-old boy was referred to the Department of Oral and Maxillofacial Surgery for evaluation of a radiopaque area on the left side of the mandible.

The subject reported no symptoms in the affected area and no mention of systemic history. Intraoral examination revealed that there was no Gingival swelling around the left mandibular region, though the mandibular left second premolar was inclined in a mesial direction.

Panoramic and periapical radiography revealed a radiopaque area around the root apices of the left mandibular first premolar, left mandibular second premolar, and left mandibular first premolar.



A) Panoramic radiography and B) Periapical radiography

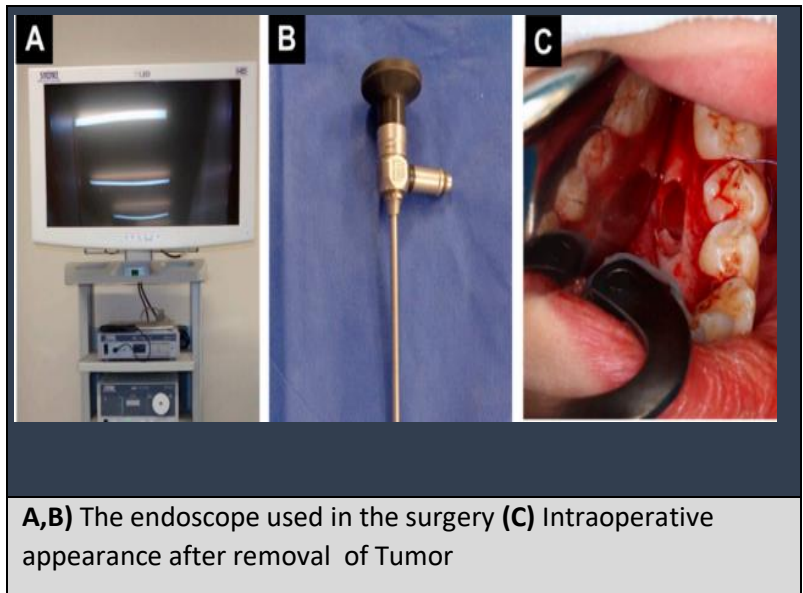
Several small tooth-like structures within the lesion located on the lingual side and an odontoma was revealed by Computed tomography (CT). Invasive surgical removal with an endoscopic intraoral approach from the lingual side was performed under general anesthesia.



SMART DENTAL UPDATES

Vol 2 | Issue 21 | 2021

Endoscope for this surgery was performed because it was difficult to see the lesion directly or with a dental mirror. KARL STORZ Endoscope was used to ensure that the lesion was removed. Small tooth-like structures were found in resected tumor. Histopathological findings revealed that hematoxylin and eosin staining of the tooth-like structures showed them to be composed of dentin and cementum. Histopathological diagnosis was a compound odontoma. No problems in the adjacent tooth roots. One year after removal of the odontoma. Devitalization of premolars, such as root resorption, tooth discoloration, or mobility, was not observed.



Conclusion: In the present case, tooth-like structures within the lesion and their location on the lingual side was revealed in CT Scan. A method performed under direct vision is usually selected for removal of an odontoma. Endoscope for this procedure was used , since it was difficult to see the lesion directly from the lingual side or with a dental mirror. With development of intraoral endoscopy techniques, more conservative bone removal has become possible, and is possible to avoid the risk of root damage in the adjacent tooth and confirm that the lesion had been definitely removed.

Reference: Hamada M, Okawa R, Nishiyama K, Nomura R, Uzawa N, Nakano K. Compound Odontoma Removed by Endoscopic Intraoral Approach: Case Report. Dentistry Journal. 2021 Jul;9(7):81.



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