"ROLE OF DIGITAL VOLUME TOMOGRAPHY IN THE IMAGING OF IMPACTED TEETH -A COMPARISON WITH COMPUTED TOMOGRAPHY AND CONVENTIONAL RADIOGRAPHIC TECHNIQUES"

BY

DR. PRIYA P

Dissertation Submitted to the
Rajiv Gandhi University of Health Sciences, Karnataka, Bangalore

In partial fulfillment
of the requirements for the degree of

MASTER OF DENTAL SURGERY (M.D.S)

In

t-917

ORAL MEDICINE & RADIOLOGY

Under the guidance of

DR. VENKATESH G. NAIKMASUR
PROFESSOR AND HEAD

DEPARTMENT OF ORAL MEDICINE & RADIOLOGY
S.D.M. College of Dental Sciences & Hospital,
Dharwad

2009 – 2012

ABSTRACT

Objective: The objective of the present study was to evaluate the role of DVT in the assessment of impacted teeth and to compare the image information obtained by CR, DVT and CT for the impacted teeth with respect to the parameters like the three dimensional orientation of impacted teeth in the jaw, their crown and root morphology, proximity to anatomical structures (inferior alveolar canal, maxillary sinus, etc.), pressure effect on adjacent teeth and associated pathologies.

Methods: A total of 40 impacted teeth in 23 patients were assessed with three different imaging modalities viz CR, DVT and CT. OPG was mandatory for all the patients to diagnose the impacted teeth. Keeping all the above mentioned parameters in perspective, the images were scored by 6 experienced and calibrated observers on a 5-point scale (1-poor, 2-fair, 3-sufficient, 4-good and 5-excellent). The inter observer variability was assessed with Kappa statistics. The scores obtained in each of the imaging modalities were compared with Kruskal Wallis Anova Ranks and Mann Whitney U Test.

Results: There was significant agreement between the observers indicating no interobserver variation in any of the parameters assessed irrespective of the imaging modality (CR, DVT and CT). The total and the mean scores obtained from each of the imaging modality with respect to the parameters assessed were compared by Kruskal Wallis Anova Ranks. Significant difference was observed between CR scores and scores in DVT and CT. The scores were significantly lower in conventional radiography as compared to DVT and CT. Also, it was conspicuous that there was no significant difference in the scores between DVT and CT. Pair wise comparison

between CR and DVT, CR and CT, and DVT and CT was done by Mann Whitney U Test. Significant difference was observed between CR and DVT and between CR and CT. The scores were significantly lower in conventional radiography as compared to DVT and CT. There was no statistically significant difference between DVT and CT. Scores in both these groups were comparable.

Conclusion: The DVT and CT images were better with high predictability scores compared to CR images. Further, the predictability scores were equivalent in both DVT and CT. DVT provided 3 dimensional images, closely akin to regular CT imaging with considerably lesser radiation and cost.

Key words:

CR, CT, DVT, Impacted tooth