



Validity of 2 Dimensions Radiograph to Detect the Furcation Entrance of Multi-rooted Teeth in Surgical Crown Lengthening Treatment Planning

RSU
College Of Dental
Medicine

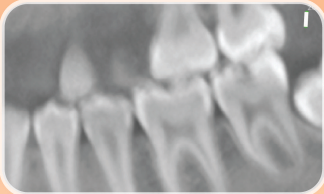
BACKGROUND

In multiple-root teeth, the key anatomical factor that affects crown lengthening surgery is the position of the furcation entrance.

Ostectomy should not be performed beyond this level because it poses a threat of creating furcation involvement. This condition creates an area that is very hard to clean and may lead to a worsened tooth prognosis. Determining whether osseous resection is possible for a given tooth requires knowledge of its root trunk length. Current protocol for treatment planning depends on the estimated root trunk length from 2-dimensions radiograph, however there was no study to prove the quality of this method. The aim of this study is to evaluate the accuracy of 2 dimensions radiograph in treatment planning of surgical crown lengthening procedure.



MATERIAL AND METHOD



300 Simulation cases of 2 dimensions radiograph

were constructed from CBCT data from College of dental medicine of Rangsit University between 2014 and 2018.

41 Periodontists were included in this study to estimate the root trunk length of each case via online quizzes.

The answer will be converted to the judgement about possibility to perform surgical crown lengthening and will be compared with the data retrieved from CBCT measurement by 2 Periodontists to processed into sensitivity, specificity, ROC curve and area under ROC curve (AUC) of conventional protocol.

RESULTS

Sensitivity and specificity of Periodontist judgement were 0.736 and 0.662, respectively.

AUC was 0.699, indicated that the ability of Periodontist to judge if the tooth was possible to perform crown lengthening procedure based on 2 dimension radiograph were in the poor level of accuracy.

The chance to make a right judgement was around 70.24%. This data emerged the serious situation because it can be interpreted that

Periodontist have a chance to make the wrong judgement in every 3-4 cases



CONCLUSION

Periodontist should not make treatment plan for crown lengthening procedure based on 2 dimensions radiograph only due to poor rate of accuracy to prevent the misjudgment that may lead to inappropriate decision to perform surgery or the extraction of savable teeth.



ADVISORS Dr. Vittawin Dechosislpa
Dr. Anek Chayasadom

MEMBERS

Sarunya Yingjaroensuk 5800131
Nedwarat Samattasinwanit 5800141
Pawarisa Vicetjindawat 5805129

Suphanut Ratanapisit 5805130
Pattarawan Ueearerethum 5805139
Sarun Kerdksamut 5900189