Abstract

Objective: The Digital Radiographic Subtraction (DRS) is a technique used for comparing two radiographs of the same subject taken at different moments to demonstrate the differences between them. However, reproducibility of the geometry of relation among object, film and x-ray source is mandatory to avoid structural noise formation. The aim of this study was to compare the application of different recording methods (a priori and a posteriori) at different exposure times (0.2 and 0.4 s) on the production of structural noises in subtracted images. Method: Radiographs of 10 mandibles were taken using conventional film holders without and with a priori record, and then both methods were reproduced 15 days later. The a posteriori record was made using the Regeemy® 0.2.43 software and the subtraction was performed with Image Tool® 3.0. Results: with the 0.4 s exposure time, the groups presented lower standard deviation values compared with the 0.2 s exposure. The groups with a posteriori and a priori records had the lowest standard deviation values, followed by the groups with a posteriori record. Conclusion: Under the tested conditions, the 0.4 s exposure time was more appropriate and the use of a posteriori record was essential to obtain subtracted images with low structural noise.

Keywords

Radiography Dental, Subtraction Technique, Diagnostic Imaging, Early Diagnosis.