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Extraoral imaging for proximal caries detection: Bitewings vs scanogram.
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OBJECTIVE: The objective of this study was to compare the dia gnostic accuracy of 3 extraoral imaging modalities with an intraoral bitewing radiograph for proximal caries detection. STUDY DESIGN: Three modalities of Cranex TOME scanograms, x-ray film and DenOptix photostimulable phosphor plates with and without digital enhancement, were compared with Insight intraoral radiographs for proximal caries detection. Nine observers evaluated images of the proximal surfaces of 45 extracted posterior teeth. The presence or absence of caries was scored using a 5-point confidence scale. The ground truth was determined from histological sections. Responses were evaluated by repeated measures analysis of variance (ANOVA) for areas under receiver operating characteristic (ROC) curves (A z). RESULTS: Repeated measures ANOVA (at alpha = 0.05) demonstrated significant differences among modalities (P = .041). Paired t tests with Bonferroni correction demonstrated that Insight was superior to only unenhanced digital scanograms (P = .003). Mean A z scores (+/-SD) were 0.73 (+/-0.08) for Insight, 0.65 (+/-0.06) for screen/film scanogram, 0.64 (+/-0.04) for unenhanced digital scanogram, and 0.66 (+/-0.07) for enhanced digital scanogram. CONCLUSIONS: The performances of film-based and enhanced digital scanograms were not statistically different from Insight film for proximal caries detection. Unenhanced digital scanograms exhibited a statistically significant lower diagnostic accuracy than Insight film.

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