Reviewer's report

Title: Effect of using electronic apex locator on the radiographic extent of root canal filling and the exposure to radiation during endodontic therapy

Version: 1 Date: 18 May 2005

Reviewer: Jose C de la Macorra

Reviewer's report:

General
1. Is the question posed by the authors new and well defined?
   The question is not new. Definition of problem is incorrect
2. Are the methods appropriate and well described, and are sufficient details provided to replicate the work?
   Methods are well described, but not fully correct
3. Are the data sound and well controlled?
   Report of data is incorrect.
4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
   Yes, but data are missing (see comments)
5. Are the discussion and conclusions well balanced and adequately supported by the data?
   No
6. Do the title and abstract accurately convey what has been found?
   No
7. Is the writing acceptable?
   Yes

Major Compulsory Revisions

INTRODUCTION
Paragraph "Radiograph is a two dimensional picture of a three dimensional object, this is added to technique sensitivity [12], superimposition of anatomical structure [13], patient discomfort and most important is the increased risk of ionizing radiation." is difficult to understand.

MATERIAL AND METHODS
In group II same procedures as in group I "were performed except that electronic measurements were supported by paralleling[...]working length radiograph". How was this done, i.e.: what does exactly mean that electronic measurements were "supported"?. When there was a discrepancy, which of the measures (radiograph or EAL) was assumed to be correct?. What and how was the decision made?.

RESULTS
Standard deviations are not shown at any moment. No data should be presented without mentioning them. Please, include them, at least in all tables where means are cited. Standard deviations give idea of the level of precision of measurements, which is crucial in every report.
Please, give means with no more than one decimal position. Remember: your measures were taken at the millimeter range, and more that one decimal in results is erroneous. Adding decimals does not add accuracy.
Do not repeat data that are shown in tables. For instance, delete "with a mean distance from the tip of root filling to radiographic apex of –0.529 mm and 19 in a group II with a mean distance from the tip of root filling to radiographic apex of –0.342 mm, 50 molar canals in group I with a mean distance from the tip of root filling to radiographic apex of –0.430 mm and 57 in a group II with a mean distance from the tip of root filling to radiographic apex of –0.346 mm. 36 upper canals in group I
with a mean distance from the tip of root filling to radiographic apex of –0.465 mm and 55 in a group II with a mean distance from the tip of root filling to radiographic apex of –0.332 mm, 32 lower canals in group I with a mean distance from the tip of root filling to radiographic apex of –0.444 mm and 29 in a group II with a mean distance from the tip of root filling to radiographic apex of –0.448 mm 19 vital canals in group I with a mean distance from the tip of root filling to radiographic apex of –0.618 mm and 24 in a group II with a mean distance from the tip of root filling to radiographic apex of –0.312 mm 48 non-vital canals in group I with a mean distance from the tip of root filling to radiographic apex of –0.390 mm and 24 in a group II with a mean distance from the tip of root filling to radiographic apex of –0.370 mm.” because it is all better shown in table.

DISCUSSION

"In agreement with other studies [20, 28, 36, 39, 40, 45] the present study indicates that the TAZX is useful and reliable whether used alone or supported by radiograph. (Mean distance from end of root filling to radiographic apex=–0.408)." The affirmation that TAZX system is reliable does not come straight from results of report, because it is not clear what is the level a measure should have to be reliable. Please, rewrite.

"When taking into account the tooth status the two groups were comparable [...]." This reviewer cannot find the results of this comparison. In Table 2 results are shown of comparing distances between Group I and II within vital and within non-vital teeth (separately), and in Table 3 the same, but comparing number of radiographs. Please, explain.

"The present study agreed with previous studies of a significant reduction of the total number of radiographs [43] regardless of tooth position or status [...]." This is what is straightly deduced from results. But a careful view of methodology indicates that group II is forced to have one more radiograph than group I (to "support" measurements). Mean differences in number of radiographs between groups is of 1. How do authors interpret this?. Please, comment

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of limited interest