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Aim: Root Canal treatment, as other procedures, sometimes faces unpredictable and unwanted conditions, called procedural accidents. Realizing these accidents and their reasons is essential for treatment continuance and repetition prevention. The experience learnt from each accident, decreases the occurrence percentage in the future.

Method: In this observational cross - sectional study, the information was recorded by observation and clinical examination, use of radiographs and an information form. In this study, 230 individuals referred to the dental faculty of Tehran university of medical sciences who had at least one Procedural Accident (totally 513 canals), were investigated. The data was statistically analyzed by SPSS software version 11.5 and statistical comparison according to Chi square test and Exact fisher test with a significant value of less than 0.05 ($p < .05$).

Result: In the evaluated cases, Under filling was the most common Procedural Accident found (76.5 %), poor obturation (58.7 %), ledge (17%) and overfilling (13.5 %) were seen respectively. 52.6 % of mentioned cases were successful and 47.4 % had failed.

Conclusion: We must have information about various kinds of these accidents, their reasons and ways to prevent and treat them.

Histologic comparison of the biocompatibility of MTA and CEM Cement in the femur bone of rat.

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Aim: The purpose of this study was to compare tissue response and bone reaction of rat between CEM cement and MTA contact.

Method: A total of 63 mature and healthy rats

between 250-300 gm in weight were studied. After anesthesia, holes 1 mm in width and depth were prepared surgically in both femur bones of rats and MTA and CEM Cement were placed in the left and right holes, respectively and surgical sites were sutured. Samples were divided into Three groups randomly. Samples were sacrificed after one week in the first group, four weeks in the second group and eight weeks in the third group and the operated sites were examined histologically. Statistical analyses were performed with the SPSS 15.0 using a Pearson's chi-square test. Significance was predetermined at $P < 0.05$.

Result: All the three groups of one, four and eight weeks in both agents showed the same bone reaction and inflammation and the differences were not statistically significant.

Conclusion: Both MTA and CEM Cement have the ability of causing the least amount of inflammation and most hard tissue regeneration. CEM Cement shows biological effects similar to MTA and could be an appropriate substitute. However, more studies are required prior to clinical use of this material.

Comparison of the Accuracy of Dentaport ZX and IPEX APEX Locators in Determination of Working Length in Teeth with Centric and Eccentric Foramina: An *In Vitro* Study

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Aim: The accurate determination of the root canal length has an important role in the success of endodontic treatment. The purpose of this *in vitro* study was to compare the accuracy of Dentaport ZX and IpeX Apex locators in determination of working length in teeth with centric and eccentric foramina.

Method: In this investigation, 40 teeth with