ABSTRACT

Background: Root canal treatment consists of preparation, sterilization, and obturation. During root canal preparation, cut debris is smeared over the dentinal surface forming a smear layer. Smear layer will reduce attachment of the root canal filling material to dentinal wall and organic material in smear layer can be substrate for microorganism. Preparation of root canal should be followed by irrigation. NaOCl is the most used irrigation solution in endodontic. It has been very effective disinfecting and tissue-dissolving properties but it is incapable of removing the smear layer. In the other hand, Saponin of Mangosteen pericarp extract has ability as surfactant to lower the surface tension and can dissolve debris that contain of anorganic and organic materials. Purpose: The purpose of this study was to know the differences between NaOCl 2,5% and Saponin of Mangosteen pericarp extract 0,002% in removing the debris in the root canal after the preparation procedure.

Method: Three groups of teeth 7 teeth in each) were instrumented by using K-file and irrigated as follow Group 1 (control): with aquadest; Group 2: with NaOCl 2,5%; Group 3: with Saponin of mangosteen pericarp extract 0,002%. Furthermore, those teeth were split horizontally and longitudinally 4mm above the apical. The apical third of root anal walls were observed by a scanning electron microscope (SEM).

Result: There were significant differences between each group (P < 0,05). Median value of the group 3 (irrigated with Saponin of mangosteen pericarp extract 0,002%) was 1 the smallest value compared to the other groups. It means that Saponin of mangosteen pericarp extract 0,002% was the cleanest group. Conclusion: Saponin of mangosteen pericarp extract 0,002% better than NaOCl 2,5% to remove the debris of root canal after preparation procedure.

Keyword: Saponin of mangosteen pericarp extract, NaOCl, debris