

# 6<sup>th</sup> Indian Dental Congress

November 23-25, 2015 Bengaluru, India

## Removing Separated Instruments in Endodontics. Clinical Cases - The causes, the prevention and the strategies to solve.

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**Introduction:** All modern Endodontic files may still fracture inside the root canal system and that may reduce the success rate of the treatment. The reason why instruments fracture is influenced by a number of different factors. Sometimes these events can be anticipated and even avoided as long as we respect some aspects. To remove the files or to bypass them can be one solution but sometimes surgery may be needed in order to obtain Endodontic success. New methods like ultrasonic and simultaneous traction will be explained

**Objectives:** Explore the reasons why instruments fracture inside the canal space. Elaborate forms of prevention and strategies to solve those clinical problems in order to maintain the natural tooth. Introduction to new techniques and clinical approaches. These clinical cases shown in these presentation illustrate the event of breaking a file and the strategies to remove them. Different approaches will be discussed.

**Methodology:** Some research was made in order to get some theoretical background about “broken instruments”, “fractured instruments”, “separated instruments”, “ultrasonic” and “operating microscope” in the period between 2000 and 2013. 134 articles were used and 45 were specific about these theme. Three clinical cases were object of study and selected to show how to deal with the mishap of breaking a file and the different ways to approach them. New Techniques of removal, bypassing and surgeries will be presented.

**Conclusion:** The major reasons why instruments break are: torsion of the file and cyclic fatigue of the metal. These kind of fracture may be influenced by some factors like the design of the file, the speed of rotation, the root canal anatomy and others. There are some techniques available to solve the problem of broken files like instruments to remove them, strategies to bypass them or even apical surgery. Deciding what to do is the key point to wisely solve the problem. Time to analyse solutions, and strategies should be taken. That way we can avoid more complications and iatrogenic problems that maybe caused by trying to remove broken files.

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## The antibacterial effectiveness of 80% mahkota dewa (*Phaleria macrocarpa*. Scheff [Boerl]) extract in root canal irrigation

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**Introduction.** 80% mahkotadewa extract has antibacterial activity because of its substances such as alkaloid, ethanol, saponin, and tannin. The aim of this study was to know the antibacterial effectiveness of 80% mahkota dewa extract in root canal irrigation. **Materials and Method.** This study was in vitro experimental laboratory research with Posttest Only Control Group Design. Samples were divided into 2 groups with 16 teeth of each groups. The root canals of those teeth were prepared and applied with irrigation of 80% mahkota dewa extract in the first group and NaOCl 5% in the second group. Coagulation test with Brain Heart Infusion Broth media was used to see the coagulants. **Result.** The result showed that in 80% mahkota dewa extract, there were 12 samples without coagulant and 4 samples with coagulant which meant the antibacterial effectiveness was 75%. Meanwhile in NaOCl 5%, there were 10 samples without coagulant and 6 samples without coagulants which means the antibacterial effectiveness was 62.5%. **Conclusion.** It was concluded that 80% mahkota dewa extract can effectively be used as irrigation of root canal treatment.

**Key word:** Root canal irrigation, mahkota dewa extract, coagulation test

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