

30<sup>th</sup> International Conference & Exhibition on

# DENTAL MEDICINE & DENTAL IMPLANTS

5<sup>th</sup> Annual Summit on

## AMERICAN DENTAL SCIENCE AND EDUCATION

July 20-21, 2018 | Atlanta, USA

### **Comparative evaluation of adhesion of various sealers to dentine: An atomic force microscopy study**

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Attainment of ideal root canal treatment comprises of various essential factors such as proper instrumentation, biomechanical preparation, obturation and ultimately depending upon post-endodontic restoration. The main objective of the treatment is to get absolute rid of the microbial entity and prevent any future predilection of re-infection. In order to achieve that, a proper seal is required to cut down any chance of proliferation of bacteria and future occurrence of any pathology. Gutta-percha is the most extensively used central core material to fill the radicular space. Using this material alone cannot produce and ensure a tight seal of the root canal system as it doesn't bond with dentine wall. Hence, gutta-percha is used in combination with the root canal sealer to provide a fluid-tight seal. An ideal root canal sealer should be capable of creating an effective bond between the core material and the dentine of the root canal to prevent the leakage. To provide an effective seal, several types of endodontic sealers have been developed and the evaluation of the apical sealing ability of these materials is extremely important. To our knowledge, there are no reports of studies that have evaluated the adhesive force between the endodontic sealers and treated dentine. The present study evaluated the adhesive force of three different root canal sealers to root canal dentine using atomic force microscope. The results of the study showed a very strong evidence that there exists a statistically significant difference among all the experimental groups ( $p < 0.05$ ). Group I (AH Plus) exhibited a significantly greater adhesion force values than Group II (iRoot SP) and Group III (MTA Fillapex). Group III (MTA Fillapex) was found to have the least adhesion force values among all the groups. A significant difference was also observed with a pair-wise comparison of all the tested groups ( $p < 0.05$ ). Thus, it can be concluded that AH Plus root canal sealer shows greater adhesion capacity followed by iRoot SP and MTA Fillapex.

#### **Biography**

Apoorva Motupalli, she is a dentist from India, graduated from College Of Dental Sciences in India. She is currently working as a dental assistant in Atlanta, planning to pursue her career as a dentist by obtaining DDS degree in United States in future. She has been an active volunteer in various free dental camps and community services for the past few years in order to give something back to the community or make a difference to the people around her and also to build on existing knowledge and experience.

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