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**Corresponding Author:**

Harikishan Kanani, Department of Pediatric and Preventive Dentistry, Sharad Pawar Dental College, Datta Meghe Institute of Higher Education and Research (Deemed to be University), Wardha 442001, Maharashtra, India  
E-mail: harrykanani007@gmail.com

# Effect of Various Intracanal Calcium Hydroxide Dressing Materials on pH Changes in Simulated External Root Resorption Defects

Ritu Kumari<sup>1</sup>, Ramakrishna Yeluri<sup>2</sup> , Harikishan Kanani<sup>2</sup> , Shepali Hule<sup>2</sup> 

<sup>1</sup>Private Practitioner, Dr. Joshi's Vasundara Dental Clinic, Ghaziabad, Uttar Pradesh, India,

<sup>2</sup>Department of Pediatric and Preventive Dentistry, Sharad Pawar Dental College, Datta Meghe Institute of Higher Education and Research (Deemed to be University), Wardha, Maharashtra, India

## Abstract

**Objectives:** To evaluate the effect of placement of different CH dressing materials in the root canals on pH changes in simulated external root resorption defects.

**Methods:** Seventy-five extracted single rooted teeth were decoronated to the length of 14mm. Root canals were prepared with peeso reamers. An external defect of 0.7mm depth and 1.4mm in diameter were made on the root surface, 5 mm from the apex and then assigned into 5 groups with 15 teeth in each group. Group 1: CH+distilled water, Group 2: CH paste, Group 3: Biodentine, Group 4: CH+2% chlorhexidine gel+Zinc oxide, Group 5: Distilled water. The materials were placed in the assigned groups and pH was measured with a microelectrode at 30 minutes, 24 hours, 7 days, 14 days, 21 days, 28 days and 3 months respectively.

**Results:** Results revealed significant differences in the pH between the groups at all time intervals ( $p \leq 0.05$ ). Group 1 samples showed highest pH at all time intervals when compared with other groups.

**Conclusions:** Calcium hydroxide and distilled water group maintained high pH at different time intervals in comparison with other groups followed by Biodentine group, calcium hydroxide paste and 2% CHX gel+CH+ZnO in the descending order and the pH could not be sustained by any of the material at the end of 3 months time interval.

**Keywords:** biodentine, calcium hydroxide, chlorhexidine, external root resorption