Medicated inserts for use in endodontic treatments:

Calcium hydroxide cleverly applied – still state of the art

Author: Dr. med. dent. Hans H. Sellmann, Marl, Germany

Dr. med. dent.
Hans H. Sellmann

- Studies of dentistry at the WWU in Münster
- Head of dental department in the Federal Armed Forces
- 1978 setting up a dental practice in Marl
- 1999 joint practice with Dr. (H) Peter Stickel
- Activity emphases: Panel dentist, medical journalist with more than 1,000 publications
- Treatment emphases: dental medicine, treatment of people having social issues, prophylaxis in children, treatment of disabled people under anaesthetic
- Author of a guideline on how to meet the requirements for reprocessing medical devices in conformity with the Medical Devices Act for the dental Practice

My mother always found a seat on the tram because everybody kept well away from her. My mother was a receptionist, dental technician and dental assistant, you see. She always prepared the necessary instruments, materials and medications, and the smell was inseparably associated with the anxiety-inducing visit to the dentist. Nowadays it doesn't smell anymore. According to the experts only calcium hydroxide is allowed for medicated inserts for use in endodontic treatments, except maybe in case of emergency, for which corticoid paste is barely tolerated.

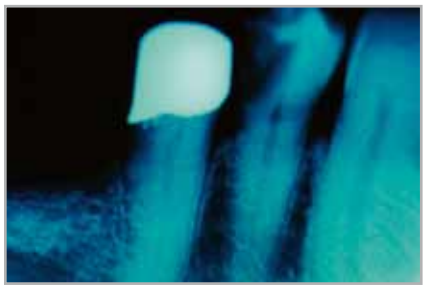
$CA(OH)_2$ – that's the chemical formula – is a base and absorbs positively loaded hydrogen (protons). The homepage of the Institute of Environmental Process Engineering of the University Bremen/Germany definesthis material as "slaked lime"; dried lime reduced to a finepowder. The carbonic acid contained in naturally broken limestone or marble is calcined by kiln firing. The burnt lime resulting thereof is then slaked with water and there we have our medication – Carrara marble in the root canal.

Calcium hydroxide is available anytime due to the special safe-keeping of Calci-Line (Hager & Werken).

A valuable base

Thanks to its specific pH value, this medication works especially effective against the microorganisms that develop during endodontic inflammations. The DGMZK (German Society of Dentistry and Oral Medicine) as well as experts on endodontics and otherwise conservative dentistry accept this – and only this – preparation for indirect and direct capping of the vital pulp in permanent dentitions.

Exterior of tooth 44.



X-ray was taken because of pain.
Findings: extremely deep caries.

After excavation: the pulp is opened, no bleeding, gangrene.

Calcium hydroxide in the can hardens fast and gets crumbly.

HAGER WERKEN

The "preservation problem" solved
Calcium hydroxide is available in many varieties. All of us are familiar with the advice to buy "a pound" of powder for little money at the pharmacy and mix it to a paste with distilled water ourselves. But there's a catch in it: The powder from the can draws humidity from the air like magic and its properties change like a chameleon. $CA(OH)_2$ turns into $CA(OH)_3$-calcite. But different from the chameleon this change is not visible. Because the pH value of the substance also decreases during the conversion though water absorption, it retains virtually no medical effect. Hager & Werken in Duisburg/ Germany have found the answer to the "preservation problem": Calci-Line. You only have to store the tip of the canula in an environment that prevents the material from drying out. When it comes to Calci-Line, the solution is a small calcium hydroxide-filledreservoir in which the canula is "parked". This prevents the material in the canula from drying out and it is always ready for use, even after you returned from your holidays, and regardless of the task you want to accomplish – medicated inserts, and direct or indirect capping.

Source: DZW Die ZahnarztWoche • Issue 5 / 03

The angled cannula allows a practical and direct application.

An alternative is picking up from a mixing pad with the root fille.

Calci-Line 2 ml syringe with 2 cannulas REF 152 283

Hager & Werken GmbH & Co. KG
Ackerstraße 1, 47269 Duisburg
Tel. +49 (203) 99269-0 · Fax +49 (203) 299283
www.hagerwerken.de · info@hagerwerken.de

HAGER WERKEN

2016092604-GB