

Effect of mixing methods and disinfection on dimensional accuracy of alginate impression

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Abstract:

Commercial mechanical mixers for mixing alginate impression materials are available in Myanmar dental market and they are more convenient and more consistent for the practitioner; however, there is very little information on the mechanical property of alginate mixed with device as compared with hand-mixing. Moreover, there is limited knowledge on dimensional changes after disinfection of auto-mixed alginates. This study was performed to study the dimensional accuracy of alginate impressions mixed by different methods with or without soaking in disinfection solution.

Commercially available alginate impression material (Kromopan, Lascod, Italy) was mixed by mechanical mixer (DB-988⁺, Coso Medical Instrument Co. Ltd.) or hand-mixed according to manufacturer's recommended water powder ratio. Metal impression tray of appropriate size was loaded with mixed impression material and impression was made on plastic typodont model. Then after washing under running water, they were soaked in 0.5% sodium hypochlorite solution for 10 minutes and then rinsed under running for 1 minute (disinfection, n=10) or cast immediately (control, n=10). Impressions were cast with dental stone (Fuji Rock, GC Co. Ltd., Tokyo, Japan). Tooth length and saddle length were measured with digital slide clipper. Unpaired T test was employed to analyze data.

Significant differences were found between auto-mixed and hand-mixed samples and between control and disinfection samples. Automatic mixing with disinfection gave casts that were the closest representation of actual model.

Automatic mixing and subsequent disinfection by soaking in 0.5% sodium hypochlorite solution is preferred for more accurate alginate impressions.

Introduction

Anatomical models are used for many diagnostic and treatment purposes in the dental practice. A dimensionally accurate impression, i.e. a negative mould of the jaw, is important for fabricating a precise anatomical model. The most commonly used impression material is alginate, irreversible hydrocolloid material. Alginates were originally developed in the 1930s (Doubleday, 1998). The main advantages of alginates are the ease of use, cost-effectiveness, their hydrophilic characteristics, and the good patient acceptability (Frey *et al.*, 2005). Although alginate is easy to manipulate, the correct handling (water/powder ratio, spatulation) affects dimensional accuracy of the material. Therefore, it is imperative to follow the manufacturer's prescriptions on mixing (Caswell *et al.*, 1986; Frey *et al.*, 2005).

Nowadays, high-speed rotary mixing instruments for alginate impression materials are available to be used in a dental practice. These instruments easily produce a fine paste low in air bubbles compared with paste mixed by hand. Therefore, it is estimated that paste obtained by this method possesses superior rheological properties by reducing the number and volume of porosities in the mixed alginate (Inoue *et al.*, 2002).

In addition, dental impressions become contaminated with the microorganisms from saliva and blood of the patients that can cross-infect gypsum casts poured against them (Chau *et al.*, 1995). This potential of cross-contamination between clinical



Establishment of the classification of and specification of the requirements for impression materials in powder form containing an alginate as the gel-forming. ISO Alginate dental impression material Prosthodontic materials. ICS: Dental materials Revised by. ISO ISO , Dental alginate impression material [ISO TC /SC 2/WG 7] on mydietdigest.com *FREE* shipping on qualifying offers. Establishment of the IS/ISO Indian Standard DENTAL ALGINATE IMPRESSION MATERIAL 1 Scope This International Standard applies to dental alginate impression. Title of Legally Binding Document: Dental Alginate Impression Material Number of Amendments: Equivalence: ISO Superceding. IS/ISO - - Dental Alginate Impression Material. Thumbnails Document Outline Attachments. Find: Previous. Next. Highlight all. Match case. Dental alginate impression material - ISO SOUTH AFRICAN NATIONAL STANDARD. Dental alginate impression material. This national standard is the identical implementation of ISO and is. dental alginate impression materials, increasing or decreasing the percentage of Organization ISO for dental alginate impression material, which. IS/ISO - - Dental Alginate Impression Material. Category: Medical Equip & Hospital. Standard Number: IS/ISO Click Here to View. Identical and KromaFaze Alginate Dental Impression Materials . ISO for Dental Elastic Impression Materials part 2 Alginate dental. Alginate dental impression materials were introduced in [1]. Since then they have been Marketed products must conform to ISO Since their. ISO Dental alginate impression material. This document has Dentistry — Hydrocolloid impression materials. Get the latest. Standard Number, BS , EN , ISO Title, Dental elastic impression material. Specification for alginate impression material. TABLE Continued ISO Dental Mercury ISO Dental Casting Gold Alloys ISO Dental Alginate Impression Material ISO. Alginate is one of the most commonly used dental impression materials; however , .. Organization for Standardization ISO (E) Alginate Dental. Alginate is one of the most commonly used dental impression materials; however , its setting time ISO (E) Alginate Dental Impression Material. alginate impression materials can be used in a dental practice. . of the sample (ISO (E) specifications). This mould has a height of. Department of Prosthetic Dentistry, Hiroshima University School of Dentistry, Hiroshima, .. ISO () Dental Alginate Impression Material, 2nd edn, pp . Dental impression material. Tear test Alginate dental impression materials were introduced in [1]. Marketed products must conform to ISO Dentistry - Hydrocolloid impression materials. and alginate hydrocolloid dental impression materials, as prepared for retail ISO mydietdigest.com - Buy ISO , Dental alginate impression material book online at best prices in India on mydietdigest.com Read ISO , Dental alginate.

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