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KEY WORDS :ALGINATE IMPRESSION MATERIAL/ IRREVERSIBLE
HYDROCOLLOID/ CHLORHEXIDINE/ PROPERTY

AMORNAT WONGLAMSAM: PROPERTIES OF AN ALGINATE
(JELTRATE®) MIXING WITH VARIOUS CONCENTRATIONS OF
CHLORHEXIDINE SOLUTIONS. THESIS ADVISOR: NITIPUN
JEERAPHAET AND JURAI NAKAPARKSIN 117 p. ISBN 974-664-182-4

The infection control procedures to limit cross-contamination during the operation of the dental laboratory through alginate impression have been considered. This research studied the effects of chlorhexidine solution employed as a disinfectant incorporated in an alginate impression. Physical properties of an alginate impression material (Jeltrate®) mixed with chlorhexidine at various concentrations of 0.2%, 0.5%, 0.75% and 1.0% W/V was compared to those of the material mixed with distilled water which served as a control group. The total working time, compatibility with gypsum, reproduction of detail, recovery from deformation, strain in compression and the compressive strength were tested following the methods and procedures instructed by ISO 1563(52) and the Revised ANSI/ADA specification No.18 for alginate impression material.

The significant increase in the strain in compression and the significant decrease in the total working time, the recovery from deformation and the compressive strength were encountered when the concentrations of chlorhexidine solution mixed into the alginate increased. The negative effects of the chlorhexidine solution on the compatibility with gypsum and detail reproduction of stone (Siamplaster®) were also observed.

The alterations of the physical properties were within the acceptable range specified in the standard, except for the compatibility with gypsum, the detail reproduction, and the recovery from deformation. These properties were accepted when the concentration of the chlorhexidine solution did not exceed 0.5%. Further study should be conducted for more understanding and improvement of the properties of alginate impression mixed with chlorhexidine solution.