

A COMPARATIVE EVALUATION OF THE THERMOPLASTICITY OF DIFFERENT GUTTA PERCHA CONES

MADHURI AGRAWAL¹, SAMEER JADHAV², VIVEK HEGDE³ & SRILATHA S⁴

¹Post Graduate Student, Department of Conservative Dentistry and Endodontics, M. A. Rangoonwala Dental College and Research Centre, Pune, Maharashtra, India

²Professor and Guide, Department of Conservative Dentistry and Endodontics, M. A. Rangoonwala Dental College and Research Centre, Pune, Maharashtra, India

³Head of the Department, Department of Conservative Dentistry and Endodontics, M. A. Rangoonwala Dental College and Research Centre, Pune, Maharashtra, India

⁴Reader, Department of Conservative Dentistry and Endodontics, M. A. Rangoonwala Dental College and Research Centre, Pune, Maharashtra, India

ABSTRACT

Aim

To compare the thermoplasticity of different commercially available brands of gutta percha at different compression loads but constant temperature.

Materials and Methodology

Thirty cylindrical specimens measuring 4mm in diameter and 1mm in height were made from each examined brand: dentsply, diadent and sure endo. After 24h, the specimens were placed in water at 80 degree C for 60s. After that specimens were placed between two glass slabs and loads weighing 3.5 and 5.0 kg were applied. Images of the specimens were digitized before and after the test and analyzed using imaging software to determine their initial and final areas. The thermoplasticity of each gutta percha brand was determined by the difference between initial and final areas of the specimens. Data were subjected to ANOVA test at 5% significance.

Results

Data showed higher flow area values for DENTSPLY under both compression loads at 80 degree C.

Conclusions

Different brands of gutta percha requires different compression loads for evaluation of their thermo mechanical properties. For all brands, the greatest flow occurred at 80 degree C under a load of 5.0 kg. Therefore, these parameters may be adopted when evaluating endodontic filling material.

KEYWORDS: Guttapercha, Endodontic Filling Material, Flow