Stress Distribution of Post–Core Applications in Maxillary Central Incisors

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ABSTRACT: The purpose of this study was to evaluate the stress distribution in a maxillary central incisor restored with various post–core applications. The study used a three-dimensional finite element method. The tooth was assumed to be endodontically treated with a porcelain crown. Two different sizes of Flexi-post, Cera-post, and Composipost were compared for 200 N palatal and incisal loads.

It was determined that, purely from the point of view of strength considerations, core material was determined to be of greater importance than post material or size. Higher elastic moduli of the posts resulted in lower stresses throughout the tooth.

KEY WORDS: finite element analysis, post–core.

INTRODUCTION

Post and core applications are often utilized in the restoration of endodontically treated teeth [1–3]. Cast or prefabricated posts are

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