

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالَ

لَسْبِحَانَكَ لَا يَعْلمُ لَنَا
إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ
الْعَلِيمُ الْعَظِيمُ

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Effect of Intraradicular Post Techniques on the Strain and Fracture Resistance of Over Flared Root Canals

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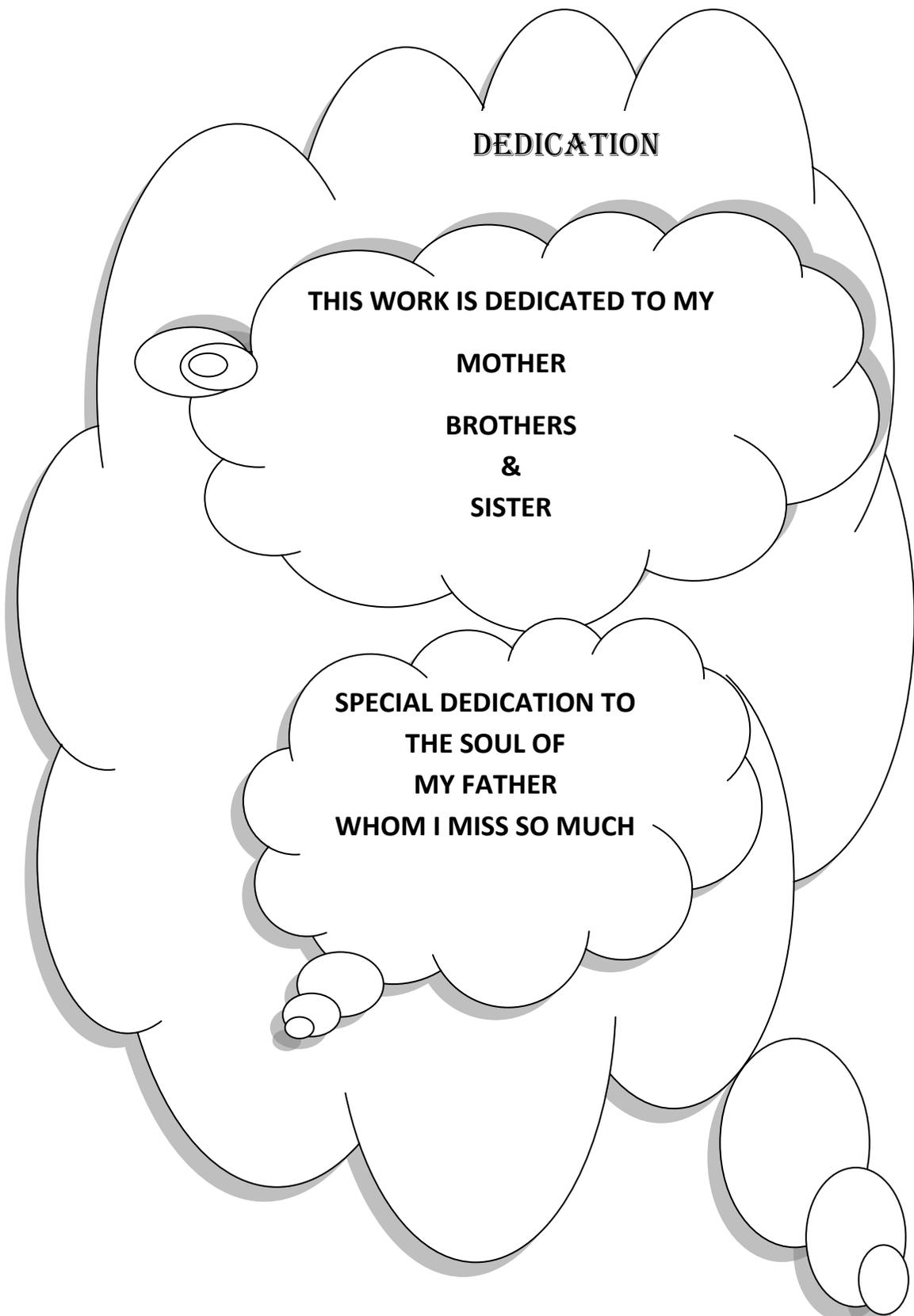
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DEDICATION

THIS WORK IS DEDICATED TO MY

MOTHER

BROTHERS

&

SISTER

SPECIAL DEDICATION TO

THE SOUL OF

MY FATHER

WHOM I MISS SO MUCH

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Introduction

Introduction

Despite technological advances in dentistry in recent years, major challenges still exist for restoring endodontically treated teeth in special cases where the root is weakened. The placement of posts creates an unnatural restored structure since it fills the root canal space with a material that, unlike the pulp, has a defined stiffness. Thus, the characteristics of the interface between restorative materials and dental structure and the rigidity of the restorative materials are parameters that strongly influence the mechanical behavior of endodontically treated teeth ⁽¹⁾.

For many years, cast posts and core were regarded to be the treatment of choice for endodontically treated teeth without considering the quantity and quality of the remaining tooth tissue. These posts offer a good fit to the root canal because they are obtained from an impression taken directly from the root canal. However, these posts present only frictional retention in the canal, and their mechanical properties in particular the modulus of elasticity, are far higher than those of dentin and fiber post which may lead to fracture⁽²⁾.

Prefabricated glass fiber posts have gained popularity and have been used as a substitute for custom metallic posts. Glass fiber posts are easily bonded to the dental structure with the use of adhesive systems and resin cements ⁽³⁾, and they have a modulus of elasticity closer to that of dentin. When bonded with dentin, glass fiber posts may provide adequate stress distribution on the tooth and may decrease the incidence of catastrophic root fractures.

The quantity of coronal and root dentin that remains after root canal treatment and post space preparation plays an important role in the longevity of the tooth and restoration. Roots can become weakened if flared as a result of recurrent caries into the root dentin around the post, over-preparation and instrumentation of the root

canal, or the fact that the pulp has become necrotic prior to completion of root formation in a young patient ⁽⁴⁾.

The resulting flared root canals have thin dentin walls, leaving them too weak to withstand normal masticatory forces and hence susceptible to fractures, which makes the restorative procedure more difficult. The morphology of flared canals also results in very wide, tapered and non-retentive posts. In these situations, if a prefabricated post is used, the excess space within the root canal would be filled up with a bulk of luting cement. This results in a potentially weak area in the restoration, which may serve to compromise the long-term prognosis. In order to avoid the extraction of flared roots, filling of the radicular space with restorative materials, such as a glass-ionomer cement, composite resins, and accessory glass fiber posts have been suggested.



Review of Literature
