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Case Note

Endodontic management of trumatized immature nonvital permanent anterior teeth: A case report

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Abstract

Patients who present with non-vital immature permanent teeth pose a special challenge to dentists and require a specially tailored treatment plan. Wide tubular canals usually seen in young permanent anterior teeth often affected by trauma pose an endodontic situation where achieving apical seal is difficult because of the wide apical foramen with a nonconstrictve terminus.

This case report presents the clinical procedure used to produce a hard tissue barrier in the open apex, and into which gutta percha along with the sealer was condensed by a special custom made technique.

Key words: Open apex, Calcium hydroxide, Apexification, Custom made obturation technique

Introduction

Teeth with incomplete rhizogenesis, pose a special challenge to dentists all over because of large open apices, divergent root walls, thin dentinal walls that are susceptible to fracture and frequent periapical lesions. This group requires a specially tailored treatment plan, different from the other patients[1].

Widely accepted endodontic management of these teeth requires cleaning and filing of the canal with temporary paste to induce a complete calcific barrier at the apex of the tooth for a root end closure of incompletely developed apex. Apexification is the term to describe this procedure. Finally different special techniques of obturation are used against which a guttapercha root filling can be condensed without the possibility of sealant or gutta-percha root filling going through the apex into the periapical tissues[2].

Many materials have been reported to successfully stimulate apexification. But calcium hydroxide has its histological importance[3]. This medicament has also been shown to change the environment in the dentin and bone to a more alkaline pH, which has been postulated to slow down the action of the resorptive cells and promote hard tissue formation and repair[4].

The calcified material that forms over the apical foramen has been histologically identified as an osteoid or cementoid. Radiographic interpretation of apical closure is often misleading[3]. It may need clinical determination.

Obturation of an immature tooth that has undergone apexification is difficult as the apical portion of the canal is often larger than the coronal portion and since the cross-section of the canal is much wider in the labio-lingual (or labiopalatal) direction than mesio distally[2].

Guttapercha is obviously the filling material of choice because it can be packed into the irregularities that are present in these large canals.

Lateral compaction is not the technique of choice because the resistance of the canal walls for lateral pressure is reduced in immature teeth and the greater bulk of gutta-percha require an even greater force to deform. Warm guttapercha techniques are best suited for filling immature canals and apices. The method to be employed will depend upon the operators preference and expertise.

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