A new classification of post and core

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Abstract

Introduction: Post is commonly used to provide adequate support and retention for the restoration of endodontically treated teeth. Various classifications of post and core were given in the past. However, classification needs to be updated because of availability of newer post and core material in the market. Materials and Methods: Electronic search on Pub Med and hand search were performed to identify relevant literature and were thoroughly screened before the articles were included in the study. Based upon the search, various classifications related to post and core have been given by many authors, however, it was observed that certain aspect of the classification of post and core were not updated. Therefore, the manuscript is an attempt to emphasise the need to develop a new classification system for post and core. Conclusion: The new classification on post and core has been proposed by the authors. The new classification aims at better understanding of post and core and can be a valuable tool for clinician and researcher.

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classification, core, post.

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Introduction

The restoration of endodontically treated teeth has always been an area of concern and the recent past has witnessed an implosion of interest in the field with regard to functional and esthetic problems. Despite the large number of in-vitro and in-vivo investigations, there is still much confusion regarding ideal treatment (1). Restoration of endodontically treated teeth required knowledge of material science, defect analysis, force analysis, and mechanical engineering principles of preparation and designs (2). Trauma and decay are mostly associated with an extensive loss of tooth structure, necessitating restoration of the tooth with a complete crown for esthetic and functional rehabilitation. It is impossible to achieve sufficient anchorage of a restoration in the remaining dentin when a large portion of the crown has been lost to damage. In such situations, post and core restorations are required for additional retention (3,4). “Post and core as an single unit or in combination of the individual units is a restorative procedure wherein a post can be defined as a rigid extension placed in the root canal space of an endodontically treated tooth so as to provide retention and stabilize a weakened tooth by providing support to the core and a core can be defined as a restorative material used for replacement foundation of extensively damaged endodontically treated tooth, that is built up on the remaining tooth structure or is in-cooperated into the post to provide an anchorage to the crown meant for final restoration” (5). Following in the wake of changing treatment concepts, the material market for posts has undergone a complete makeover. Ranging from the era of wooden posts to metal posts and more recently, carbon fiber, glass fiber, and ceramic posts, the material and design options are infinite. For nearly a century, the cast metal or prefabricated metal posts have dominated the market. In the last few years there...
has been an implosion of new materials, changing the trend toward prefabricated metal posts, resin-based composite cores, fiber reinforced resin-based composite posts and ceramic posts (1). The introduction of direct post and core restorations, associated techniques and materials have also improved significantly with advancement taking place in the field of dentistry. However, the classification of post and core is not updated with the recent trend and there are still certain revision required as the present classification given is incomplete. In view of the above facts, there is a need of a new classification system that is more comprehensive and uncomplicated.

**Material and methods**

A literature survey was performed of the database of Pub Med to identify all the articles published using the following key words: ‘classification of post core restoration in endodontics’ (Titles selected = 36). Hand search was also performed to review the articles on ‘classification of post core restoration in endodontics’. The selection criteria were limited to articles in English; the articles not in English were excluded from the study. Titles, abstracts and full text of all the articles were analyzed by two examiners for the meta-analysis portion. On the basis of the search various classification were given by many researcher. Classification based on preformed and custom cast, metallic and non-metallic, stiff and flexible, esthetic and unaesthetic, were commonly used. However with advancement many further classifications have been introduced.(6-11)

- According to various authors
- According to the technique of fabrication
- According to the fit of the post
- According to the material used
- According to the type of esthetic post

However, each of the above classifications of post and core is not complete and updated with the recent trend and there are still certain changes required. In view of the above facts a new classification has been given on the evidence of the present literature that is more comprehensive, easy and uncomplicated.

**Proposed Classification of Post and Core**

**A. Classification of Cast Post:**

1. According to type of alloy.
   - Gold alloy
   - Chrome-Cobalt alloy
   - Nickel-Chromium alloy

2. According to number of Post.
   - Single Post

**B. Classification of Prefabricated Post**

1. According to Taper
   - Parallel
   - Tapered
   - Parallel Tapered

2. According to surface character
   - Smooth
   - Serrated
   - Self threading

3. According to fit
   - Active
   - Passive

4. According to material
   - Metallic
     - Titanium
     - Stainless steel
     - Brass
   - Non-Metallic*
     - Non-Esthetic
       - Carbon fibre post
     - Esthetic Post
       - Polyethylene fibre
       - Glass fibre
       - Quartz
       - Ceramic

5. According to light transmission
   - Light transmitting
   - Non-Light transmitting

6. According to Vent
   - With Vent
   - Without Vent

7. According to Monoblock formation
   - Monobloc formation
   - No Monobloc formation

*CAN BE CLASSIFIED UNDER ESTHETIC POST

**Conclusion**

The new classification on post and core has been proposed on the evidence present in the recent literature. The classification is simple to understand, comprehensive and uncomplicated and can be a good tool for the clinician and researchers.

**References**


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