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Esthetic Management of Traumatic Teeth- A Case Report

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Abstract

Introduction : A frequent question is " will my black or broken tooth turn to normal & will I have a pleasing smile?" What most people want are teeth that make them look healthier, younger and more attractive. Trauma of the oral and maxillofacial region occurs frequently and comprises 5% of all injuries for which people seek treatment.

Treatment plan : 11– Direct composite resin restoration. 21 – Non surgical endodontic treatment followed by in office bleaching was planned.

Conclusion : A beautiful smile seems to reflect a certain style of living, and the enhancement of facial beauty is one of the primary goals of patients seeking elective dental treatment. A well designed smile is a product of accurately diagnosed, methodical treatment planning, use of advanced materials and contemporary techniques rendered by the dentist.

Keywords: Obturation, Bleaching, Esthetic, Pink tooth.

Introduction

Esthetics is an important factor in patient's decision to undergo dental treatment.A frequent question is " will my black or broken tooth turn to normal & will I have a pleasing smile?" What most people want are teeth that make them look healthier, younger and more attractive. Trauma of the oral and maxillofacial region occurs frequently and comprises 5% of all injuries for which people seek treatment. Among all the facial injuries, dental injuries are the most common, of which crown fractures and luxations occur most frequently. Trauma to the teeth may result either in injury of the pulp with or without damage to the crown or the root. In few cases, the pulp may succumb immediately or may undergo progressive degeneration and ultimately get necrosed. Traumatic injuries to the teeth can occur at any age. Causes : young children learning to walk, child abuse, sports accident affects teenagers and young adults, automobile accidents, fights and assaults.

Case Discussion

Patient complained of discoloured tooth and fractured filling in upper front region. Past dental history : Composite resin restoration wrt 11 and scaling done 2 months back. Past medical history : His medical history was non-contributory.

Intraoral examination : On examination patient had a fair oral hygiene. Interdental spacing was present in maxillary anteriors (Image 1) . Class 3 caries seen wrt 12. Patient gave history of trauma to the upper front region approximately 4 years back. Intraoral examination revealed discoloured maxillary left central incisor i.e 21 and fractured composite restoration wrt 11 (Image 2). Electric & Thermal pulp testing with 21 showed no response, with 11and 22 showed normal response.

Figure 1

Figure 2

Radiographic examination

Loss of lamina dura seen with respect to 11 and 21.

Figure 3

Treatment Plan

11 – Direct composite resin restoration.

21 – Non surgical endodontic treatment followed by in office bleaching was planned.

Procedure

Access opening and working length determination was done with #15k file (Image 4) and complete cleaning and shaping was done till F2 hand protaper wrt 21. Copious irrigation with 3% sodium hypochlorite was done and the access cavity was temporarily sealed with cavit and the patient was recalled after a week for Obturation. Master cone selection was done (Image 5). Obturation with lateral condensation was done (Image 6) and the patient was recalled after a week for in office bleaching.

Figure 4

Figure 5

Figure 6

Preparation of the tooth for bleaching was done by polishing the surface to remove any gross debris. The access cavity was re-established and the coronal Gutta Percha was removed by a Gates Glidden drill upto 1mm apical to the Cemento-enamel junction. The pulp chamber was examined and any residual debris was removed and the orifice was sealed with 1mm intracoronal barrier(GIC) over the Gutta Percha to prevent percolation of the bleaching agent into the apical area (Image 6 & 7).

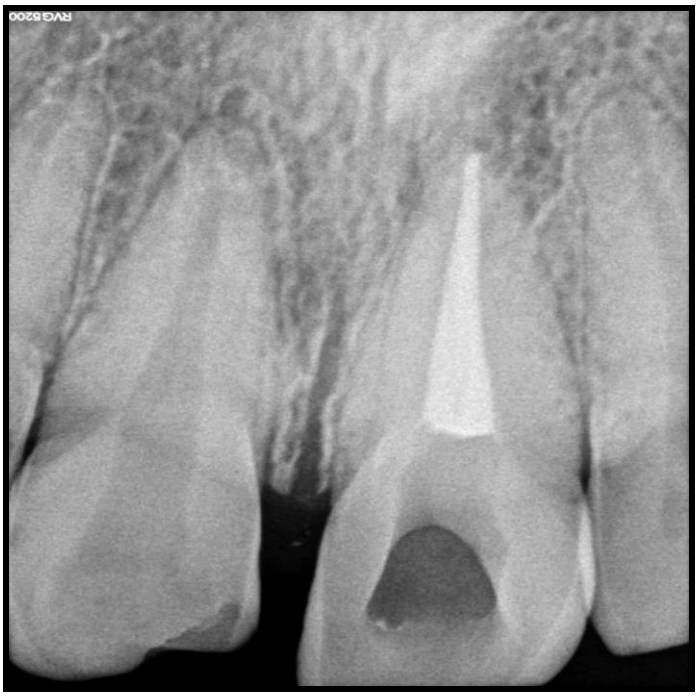

Figure 7

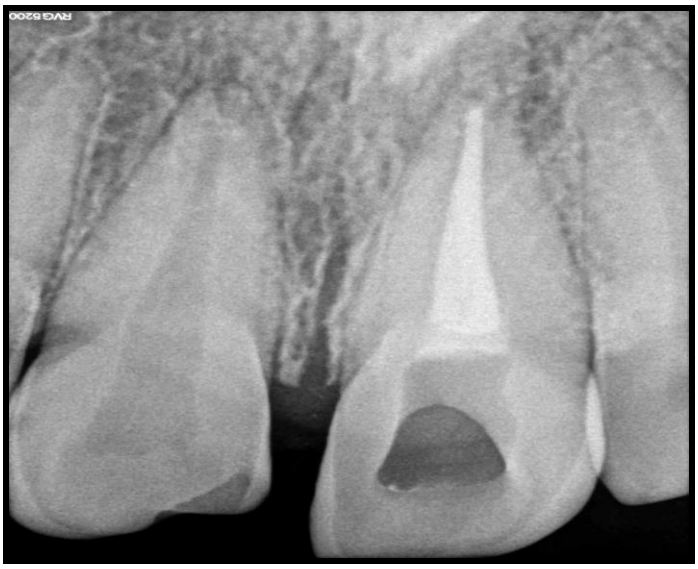

Figure 8

The paste was prepared by mixing sodium perborate and hydrogen peroxide(Pola office bleaching kit) in a dappen dish. The thick paste was placed into the pulp chamber with a plastic instrument. The mixture was activated by exposing it to light for 2 to 3 minutes. On completion of bleaching, a cotton pellet moist with the sodium perborate and hydrogen peroxide mixture was placed in the pulp chamber and was temporarily sealed. The patient was recalled after a week for shade evaluation (Image 9&10). After the desired shade was achieved, the patient was called after a week for Post Endodontic restoration.

Figure 9

Figure 10

An attempt was made to close the midline diastema. Mesial aspect of 11 and 21 and insical aspect of 11 were roughened with a diamond bur and a 45° bevel was placed. The enamel was acid etched for 10 seconds. After washing the etchant, tooth was blot dried and bonding agent(3M ESPE, 5th Generation) was applied with an applicator tip and light cured. Small increments of composite (3M ESPE Filtek, A2)were placed and contoured to ensure optimal contour and identical width of the teeth. After restoration final finishing and polishing was done using finishing bur, finishing disc and finishing cups (Image 11 & 12) .

Figure 11

Figure 12

Discussion

As Goldstein states, "Esthetic dentistry is the art of dentistry in its purest form."[1] One of the greatest assets a person can have is a smile that shows beautiful natural teeth. When teeth are discolored, malformed, crooked, or missing there is often a conscious effort to avoid smiling and individual tries to cover up their teeth[2]. Correction of these type of dental problems can produce dramatic change in appearance which often results in improved confidence, personality, and social life. The restoration of

smile is one of the most gratifying and appreciated service a dentist can render. Patients demand for esthetic with minimally invasive procedure, has resulted in the extensive utilization of direct composite resin restoration.

Direct composite restoration has several distinct advantages, such as :- conservation of tooth structure. reversibility of procedure. lower cost to patient. relative ease of addition or removal of material when required[3]. Closing diastema in one visit. Color, shape and tooth position can be corrected at once. Correction can be done immediately. Tooth discoloration is defined as "any change in the hue, color, or translucency of a tooth due to any cause; restorative material, pulpal necrosis or hemorrhage may be responsible."[4] . The discoloration may be due to extrinsic or intrinsic stains. This can be patient related or dentist related. Patient related causes : pulp necrosis, intrapulpal hemorrhage, age, calcific metamorphosis, developmental defects, tetracycline. Dentist related causes : pulp tissue remnants, intracanal medicaments, obturating materials, pins and posts, resin composites.

Bleaching is a treatment modality involving an oxidative chemical that alters the light absorbing or light reflecting nature of a structure, thereby increasing its perception of whiteness. Non vital bleaching has not found much favour amongst the clinicians because of the fear of resorption. But case reports have shown that adhering to the proper barrier placement methods can definitely prevent the development of the resorption. The protective barrier was placed 1 mm below the facial CEJ because it resulted in more acceptable aesthetic results, particularly in the cervical region. Several barrier materials are used eg: polycarboxylate cements, zinc phospate cements, MTA, intermediate restorative material [5] .Non vital bleaching has several advantages over other post endodontic treatment options like crowns. In contrast, non vital bleaching is a non invasive procedure and it also preserves the patient's natural tooth structure.

Conclusion

A beautiful smile seems to reflect a certain style of living, and the enhancement of facial beauty is one of the primary goals of patients seeking elective dental treatment. A well designed smile is a product of accurately diagnosed, methodical treatment planning, use of advanced materials and contemporary techniques rendered by the dentist.

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