

## Case Report

### **Fibre Post & All Ceramic Crown- A Simple Approach to the Perfect Smile**

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**Abstract:** The Perfect Smile has been the object of desire of man since time immemorial. Aberrations like discolored, unsightly, malposed and malformed anterior teeth can make an individual psychologically depressed and socially restrained. With the advancement in cosmetic dentistry, the aforementioned plethora of esthetic woes can be changed and restored to more desirable form. Selection of the treatment depends on multiple factors viz. preservation of natural tooth structure, patient's expectations and the expertise of the prosthodontist. This paper describes esthetic improvement of a patient having fractured central incisors with fibre post followed by all ceramic crown; all aimed at achieving the 'Perfect Smile'.

**Keywords:** Perfect Smile, Esthetics, All-Ceramic, fibre post, Abberations.

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#### **INTRODUCTION**

The common man is bombarded by the media extolling the virtues of 'The Perfect Smile.' Rumor has it that England's Queen Elizabeth I filled the gaps of her missing teeth with cotton rolls. Years ago, people had few choices if they had cracked, chipped, missing or discolored teeth. A healthy smile improves self-image, confidence and projects an aura of health to others. Discolored, unsightly, malposed, malformed anterior teeth can make an individual psychologically depressed and socially less active. In the 21st century of cosmetic dentistry, discolored, fractured, malformed, malposed teeth can be changed and restored to highly desirable form due to development of wide range of materials and techniques. This paper will explain case report of a patient having fractured central incisor with fibre post followed by all ceramic crown which despite being minimally invasive ;hold the potential of a radical transformation; all aimed at achieving the 'Beautiful Smile'.

#### **CLINICAL REPORT**

A 17 yrs old boy presented in Deptt of Prosthodontics, PGIDS Rohtak with Ellis Class III fractured central incisor due to trauma and was seeking treatment to improve her esthetics. (Fig. 1 & 2) Root canal treatment of fractured tooth was done on the basis of clinical and radiological findings. During the treatment planning session, the patient was given the option of porcelain-fused-to-metal or metal-free restorations [1,2]. The patient chose to have his tooth restored with all ceramic. So, esthetic improvement

with fibre post followed by all ceramic crown was planned [3]. Occlusion was analyzed preoperatively, both clinically and with the aid of mounted study models on a semiadjustable articulator [4]. A diagnostic wax-up was completed and modified at chairside with the patient's input, until the final form of the new restorations was deemed esthetically satisfactory [5]. Post space preparation in root canal treated central incisor was done for 1.3mm diameter glass fibre post [6]. (Reforpost ; *Angelus*, Londrina, PR, Brazil) with corresponding drill.(Fig. 3)

Post cementation was done with Rely X Unicem Self Adhesive Universal Resin Cement (3M ESPE, Germany) (Fig. 4,5 & 6) followed by core build up with composite resin [7]. (Pertac II ESPE/GmbH, Seefeld Germany)

Tooth preparation for all ceramic crown was done and definite shoulder finish line of 1mm width was established all around;0.05 mm deep into the sulcus. (Fig. 7). Retraction procedure was carried out, a polyvinyl siloxane (Aquasil soft putty and Aquasil LV,Dentsply Intl) impression was made using the putty reline technique in a rim-lock impression tray [7]. This was followed by temporization [4] with Protemp™ Crown Temporization Material from 3M™ ESPE™ US .An interocclusal record at maximum intercuspation and a face bow transfer were obtained. The shade was determined with a shade guide (Vitapan 3D MasterVita, Bad Solingen, Germany).

Removable dies was fabricated [8]. All ceramic crown was fabricated (IPS Empress 2; Ivoclar vivadent, Schaan, Liechtenstein)with layering technique and checked for fit, marginal adaptation ,contour and color in patient's mouth. The tooth surface was cleaned with pumice slurry, rinsed with a water spray, and lightly air-dried so that the surface had a slightly glossy appearance. Cementation was done with Rely X U 100 (3M ESPE, Germany) a dual cure self-adhesive resin cement [9](Fig. 8). Excess resin cement was removed after brief light exposure (app. 2 sec).Then light cured for 20 sec on each surface[10]. We can appreciate the smile make over of the patient in the post operative photograph.(Fig. 9) The patient was instructed to continue with oral hygiene regime.

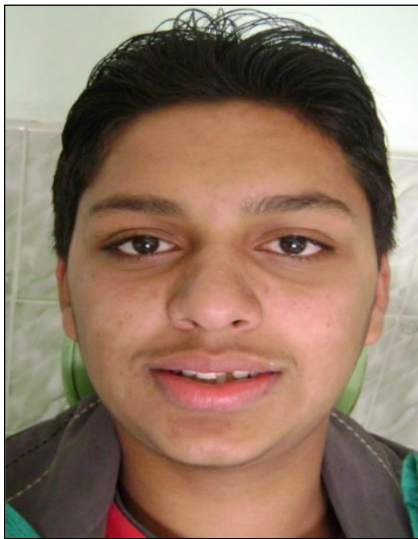


Fig-1



Fig-2



Fig-3

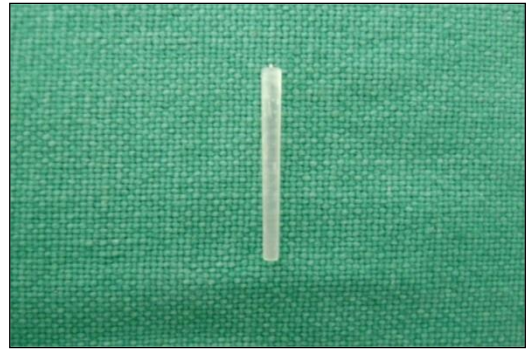


Fig-4



Fig-5



Fig-7



Fig-7



Fig-8

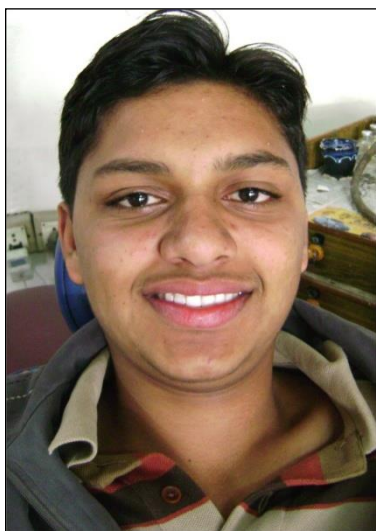


Fig-9

## DISCUSSION

A pleasing smile with attractive, healthy teeth is a desirable part of overall appearance and self-esteem. In the restoration of anterior teeth, there are many factors to be considered that depend on the patient's expectations and the expertise of the prosthodontist.

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. 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. 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[11].

All ceramic crowns can be used to restore the normal anatomy of fractured and unesthetic teeth. Various all-ceramic systems include Iceram, TECH Ceram, IPS Empress, Cerec, OPC, Dicor, Procera, Lava system. One system that appears to have great promise is IPS Empress

(Ivoclar North America, Inc. Amherst, N.Y.) when used as a veneered crown. The core material with this system has excellent translucency, and the esthetic results obtained with the system are excellent and predictable[12]. It is generally accepted today that most all-ceramic crowns should be internally etched and bonded into place with a resin cement. Bonding these restorations results in somewhat greater strength, which should translate into improved clinical service. Clinicians should avoid using resin-modified glass ionomer cements with all-ceramic crowns[13].

Thus, advances in aesthetic materials have allowed dentistry to provide a cosmetic upgrade while restoring defective teeth, treating disease and restoring comfort and function.

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