



Case Report

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Translucent Zirconia Restorations: A Case Report



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Abstract

Durable restorations that maintain tooth's integrity, high strength, and excellent natural appearance can be achieved using high strength dental ceramics. Recent CEREC technology allows in one visit designing and milling of indirect restorations with a strong base structure such as Zirconia. In this case report, a 43-year-old female patient came to the clinic aiming to alter her maxillary teeth and to get beautiful natural smile. On clinical examination, she had previous dental treatment since many years with PFM. The case was properly studied; the newly invented translucent Zirconia was fabricated with very successful results.

Introduction

Porcelain fused to metal restoration systems are considered a high-strength treatment modality associated with durable success, however; they had certain disadvantages, mainly in terms of aesthetics and biocompatibility [1]. Over the past decade, patient's expectations of esthetic are highly progressing and variable novel all-ceramic systems have been developed.

Actually; rapid improvements in high-strength all-ceramic technology have been achieved with the rise of Computer-Aided Design/ Computer-Aided Manufacturing (CAD/CAM) systems, like the high translucency Zirconia [2-4]. The CAD/CAM design and manufacture of these ceramic restorations involves optical 3-dimensional scanning and digitizing of the dies; in order to precisely duplicate the prepared margins of the abutment teeth. Then, the obtained scanned 3-dimensional images of the dies are used to design the substructure of the permanent all-ceramic restoration that is prompted by computer software [1].

Fortunately; durability and clinical evaluation reports of all-ceramic prosthetics are promising [2]. For recent ceramics, reports have confirmed a success rate of about 98.4% of clinical service of more than 5 years [3]. The following report describes the restoration of full arch maxillary teeth with Lava zirconia all-ceramic system.

Case Report

A 43-year-old female patient came to the clinic complaining from unpleasant smile and esthetic of her maxillary teeth. Patient was medically free, smoker and had good oral hygiene. On clinical examination, the maxillary central incisors were discolored, and possessed generalized inter dental spaces with central diastema. Moreover, metal show and open margin of all PFM (Porcelain Fused to Metal) restorations of teeth number 2, 3, 4, 5, 13, 14 and

15 were noted. The maxillary right first premolar was previously root canal treated and discolored by effect of a huge amalgam restoration. Primary casts for upper and lower jaws were prepared as well as a panoramic radiograph was get for case study, diagnostic wax up and treatment planning.



Figure 1: Preoperative view.



Figure 2: Postoperative patient smile.

Provisional restoration was constructed for the patient, face bow registration was recorded and shade for the final restoration was selected with a spectrophotometer. The teeth were prepared,

Zirconia full ceramic crowns were constructed, the fitting surface was treated, acid etched with Hydrofluoric acid and coated with Silane coupling agent. The tooth surfaces of abutments were acid etched with Orthophosphoric acid for cementation with resin cement having a shade matching the restoration (Figure 1 & 2). Patient was followed up for more than 6 months; she was very happy, felt self-confident of her smile and liked the successful outcome that was built on long-lasting function and wonderful aesthetic natural appearance.

Discussion

Smile is highly affecting the psychology and social life of peoples. Aesthetic is developing rapidly with the nano-technology in dental treatment [1,5]. The main problem of previous zirconia was opacity and debonding of its porcelain laminates [6]. In this case the female patient gained a lot from the high translucency Zirconia restoration; very nice esthetic appearance, long-lasting high strength, good bonding with tooth structure owing to the silanization process and nano resin cements [4,7].

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