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CASE REPORT

RESTORING DISLODGED RESTORATION OF MAXILLARY RIGHT AND LEFT CENTRAL INCISORS USING DIRECT COMPOSITE RESTORATION: A CASE REPORT

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ABSTRACT

Direct composite restorations are used very commonly due to its availability, high strength and excellent aesthetics. Early composites were weak and suitable only for anterior restorations. Current composites are highly aesthetic and offer high strength for their intended purposes. Aesthetic restorations always play an important role for emotional and psychological well-being of the individual. In the present article, an aesthetic rehabilitation of maxillary right and left central incisors with dislodgement of filling material restored with Direct Composite resin is presented.

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INTRODUCTION

Composite resins have been introduced into the field of conservative dentistry to minimise the drawbacks of the acrylic resins that replaced silicate cements (the only aesthetic materials previously available) in the 1940s. In 1955, Buonocore used orthophosphoric acid to improve the adhesion of acrylic resins to the surface of the enamel. In 1962 Bowen developed the Bis-GMA monomer in an attempt to improve the physical properties of acrylic resins, as their monomers only allowed linear chain polymers to be formed (Bowen, 1963). Restorations in anterior teeth are aesthetically more demanding, so composites with other properties are indicated in these cases: good polishing, suitable opacity for a natural look or fluorescence. Polishing depends on particle size and composites with submicronic fillers or nanoparticles are ideal. It should be remembered that materials can be combined, as in the case of a large class IV restoration, where a high-load densified composite (generally hybrid) covered by a microfine (microfiller) composite in the vestibular area would be indicated (Terry, 2004). The physical, mechanical and aesthetic properties and the clinical behaviour of composites depend on their structure. Basically, dental composites are composed of three chemically-different materials: the organic matrix or organic phase; the inorganic matrix, filler or disperse phase; and an organosilane or coupling agent to bond the filler to the organic resin. This agent is a molecule with silane groups at one end (ion bond to SiO_2) and methacrylate groups at the other (covalent bond with the resin) (Goldstein, 2002).

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Case Report

A 35 year old male patient reported with chief complaint of dislodgement of filling material in upper front tooth region one month back. History of present illness revealed that there was dislodgement of restoration from the upper front teeth (Maxillary Right and Left Central Incisors) and there was no pain (Fig. 1.) Past medical history was non relevant. Past

dental history revealed that patient had got restoration in the upper front tooth region (11, 21) one year back from private oral and maxillofacial health care practitioner. Family history and social history were non-contributory. Personal history revealed that patient had habit of gutkha chewing 5 packets per day since 10 years.

Fig. 1. Pre-restorative photograph

On extra oral examination face was bilaterally symmetrical. There was no swelling in upper front tooth region. The colour of upper lip was normal. No signs of inflammation were evident. On intraoral examination there was no swelling. There was no vestibular obliteration as well as tenderness. There was loss of tooth material i.r.t. 11, 21 on the mesial aspect of proximal surfaces. There was no tenderness on percussion. Both 11 and 21 were vital on tooth vitality test. Intraoral periapical radiograph was done i.r.t. 11, 21. The radiograph showed that there were ill-defined radiolucency present at mesial proximal surfaces of 11, 21 involving enamel, dentin. No involvement of pulp was seen. No periapical pathology was seen radio-graphically. After clinical and radiographical examination treatment was decided as direct composite restoration due to single visit, low cost, repair facility and for being conservative treatment option. The patient was informed and consented to perform the proposed treatment plan. Patient's occlusion was checked. On the basis of shade matching A1 shade was selected for the treatment of patient. Teeth 11, 21 were isolated. After getting proper isolation thoroughly cleaning and scrubbing was achieved.

Fig. 2. Post-restorative photograph

The enamel of upper right and left central incisors (11, 21) were roughened in collar like manner. After preparation the teeth were pumiced, rinsed and dried. Then the surfaces were etched by N-Etch, Ivoclar Vivadent) for 40 seconds. Again the teeth were washed and dried using air-water syringe. The Tetric N-Bond, Ivoclar Vivadent was used as bonding agent on the prepared surfaces and light cured for 20 seconds. A thin layer (not more than 1 mm) of composite (Tetric-N-Cream, Ivoclar Vivadent) was placed on the right and left upper central incisors (11, 21) which covers from labial to lingual preparation of the both teeth. After achieving the accurate composite placement process and precise position the material was cured for 40 seconds on each surface. During the restoration of right and left upper central incisors the adjacent teeth were isolated with Mylar Strips. The contouring and gross reduction of the composite resin was performed with the help of variety of burs and diamond points during the finishing stage. Incisal edges were established with the help of ultrafine polishing disc. Final polishing was done with the help of polishing points. (Fig. 2)

DISCUSSION

Fractures and wear tooth, poor dental position, trauma and dissatisfaction aesthetics are the major causes of seeking patients by the dentist. All these problems could be rehabilitated with indirect or direct restorations. The choice of the ideal material should consider some factors, such as the rehabilitation area, space available, the aesthetical potential of each material, the translucency of the adjacent teeth, type of reminiscent and antagonist that occlude with the new restoration. Direct restorations have good predictability, resistance load, longevity and compared with indirect restorations have greater preservation of dental tissues, low cost and fewer clinical sessions. However, restorative aesthetic works mainly require skill and practice of the dentist (Pereira, 2017).

The human beauty is one of the greatest mysteries of humanity, the first impression concentrated is in the beauty of face and body proportions. Beauty studies are conducted since ancient times, considering how attractive something that achieves harmony between the lines or involving what was known as the golden ratio (Talarico and Morgante, 2013). The smile is something essential in the beauty of face, and the important criteria are white and aligned teeth, and harmony of the lips (Lecocq, 2014). Direct techniques using composite resins are an excellent alternative to smile rehabilitation devolving dental aesthetics featuring accepted longevity and low cost (Ardu, 2013). The use of direct composite resin restorations as treatment plan is based in the literature for their good properties and clinical performance. The literature shows a high success rate for direct restorations with composite resin, provided they comply with the principles of restoration fabrication. It is observed 95% success rate for restorations class III and 90% for Class IV restorations after 10 years (Blackham, 2009).

Conclusion

Composites have indisputably acquired a prominent place among the filling materials employed in direct techniques. They are highly aesthetic. Nowadays composites are used as a satisfactory restorative material for anterior tooth restoration as well as posterior tooth restorations. These materials conserve the tooth structure better because they are retained by adhesive methods rather than depending on cavity design. The success of these restorations depend on the correct indication, good isolation, choice of the right composite for each situation, use of a good procedure for bonding to the dental tissues and proper curing.

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