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Scientific Editorial -Retreatment in Dentistry

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This era of dental practice will go back in history for two reasons. One of the exemplary work level achievements due to the advancements in technology and development of new treatment modalities as well by the development of the new dental materials. At the same time the misuse of the technology and the improper decision making has lead to the catastrophe in practice, where many cases are retreated, be it the endodontics or orthodontics or restorative.

The careful clinician not only has to learn the proper treatment delivery, but also the management of the treatment failures. Although Endodontics has been the major retreated dental treatment, orthodontics and implants are not far behind.

Unscrupulous use of rotary endodontic systems by clinicians especially followed by a one or two days training in the same, has been the major factor in endodontic failures. The sponsored research is to take the blame for the conducting of such training programs for the non-endodontists. Added to it the high selling of the single sitting RCT has also been attributed to the failure of endodontic treatment.

The Preadjusted edge wise appliance made orthodontic treatment easier as compared to the conventional straight wire and begs. At the same time, the improper following of the protocols of the prescriptions as by MBT has led to many a failures in the treatment, be it relapse or improper finishing and detailing. Not very rare do we come across cases completed on a single NiTi arch wire on some cheap brackets.

Dental Implantology is not far behind when it comes to failures and retreatment by another clinician. It may be attributed mainly to improper treatment planning. Most of us see many cases with implants in maxillary sinus to improper angulations as well as improper application of the use of one piece implants.

Added to the above, we have for ages been witnessing fractured restorations, left over root pieces after extractions, dentures with loss of retention and improperly cemented crowns and bridges. Lack of knowledge of dental occlusion can be attributed to majority of the failures in restorative dentistry including dental implants.

Diagnosis, skills, decision making play a pivotal role in day to day practice. Sharpening the axe of knowledge on a daily basis should be beyond liking cases facebook timeline. A doctor is a student throughout his life – an idiom every clinician aught to believe and live with.

A viable option for immediate restoration of missing anterior tooth- a case report.

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Abstract

Tooth loss in the anterior region is for most patients a deeply traumatic experience. Although an anterior tooth has mechanical functionality, it is the compromised facial esthetics associated with tooth loss that is the patient's primary concern. The loss can be due to trauma, periodontal disease or endodontic failure. Depending on multiple factors, the start of the definitive treatment may require short to long term temporization. This article describes the immediate replacement of missing anterior tooth with natural pontic using glass fiber ribbond and composite resin restorative material. This will boost up the patient's self-esteem and confidence as his own tooth is being utilized for the restoration.

Key-words:composite resin, natural tooth pontic, ribbond material.

Introduction:

Significant improvements in tooth colored restorative materials and adhesive techniques have resulted in numerous conservative aesthetic treatment possibilities.1Whether the tooth is removed surgically or lost due to trauma the dentist should consider an immediate means to satisfy the patient's cosmetic requirements.2 Natural tooth pontic (NTP) suitably modified and bonded to adjacent teeth enables proper healing in the area without compromising the anterior esthetic demands of the patient.3 In this case we have used glass fiber ribbond material and composite to stabilize natural tooth pontic with abutment teeth.

Case Report

A 28-year-old healthy male patient reported to the Department of Prosthodontics, Pacific Dental College and Hospital Udaipur, with a complaint of labially placed maxillary right central incisor (Fig.1). The tooth had been traumatized by injury a year ago. Clinical examination revealed that it was protruding out from the arch form (Fig. 2a &b).The tooth was root canal treated 6 months ago but the prognosis of the tooth was poor because of internal resorption of the root which was confirmed with the

radiographs. Adjacent teeth were tested for vitality which showed normal response. Finally extraction of the traumatized incisor followed by immediate replacement with natural tooth pontic was planned, since the patient was highly concerned about aesthetics.

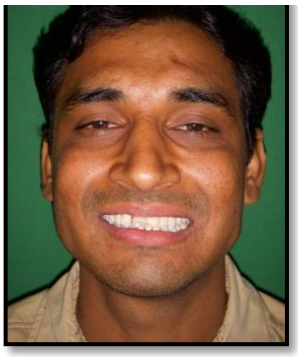

Fig1: pre-operative extra-oral

Fig2a: intra-oral view

Fig2b: intra-oral view

Technique: After the planned treatment, diagnostic casts were made. The tooth was atraumatically extracted under local anesthesia and haemostasis was achieved without compressing the labial and palatal cortical plates. The extracted tooth was cleaned with the help of disinfectant solution. Later the crown portion of tooth was segregated from the root using sintered diamond disc at cemento-enamel junction and stored in saline. After sectioning the tooth, newly created apical opening of the pulp canal in the crown was cleaned with saline. This crown was then acid etched in the internal and apical portion using 37% phosphoric acid followed by the application of a layer of dentin bonding agent. The cavity was then restored with the composite resin material and light cured. This contouring with composite resin helped to achieve an ovate pontic design which enhanced the emergence profile. This pontic was then tried and adjusted on the patient. In order to splint this pontic, required length of glass fiber ribbond material was measured. The measurements were taken from maxillary right canine to left lateral incisor on the cast and placed on a sterile cloth after cutting the desired length of the fiber. The palatal surface of abutment teeth were roughened using coarse flame shaped diamond bur then isolated, cleaned and dried. Meanwhile pontic was also cleaned with pumice, washed and dried. The palatal surface of abutment teeth and pontic were then etched with 37% phosphoric acid for 30 seconds, washed and dried. Bonding agent was applied to the etched enamel and cured for 20 seconds. A thin layer of composite resin was placed on the palatal surface of the abutment teeth and pontic and pre-cut ribbond material is placed over it and cured. A layer of composite resin was placed over the top to completely cover this fiber and cured. Excess composite resin was

removed and occlusal interferences were checked in centric, protrusion and lateral excursions. Finishing and polishing procedures were carried out. (Fig. 3a & b &

Fig. 3a: Splinted natural pontic to adjacent teeth with composite and ribbond material

Fig. 3b: Post-operative intra-oral view.

Fig. 3c: Post-operative extra-oral view

Discussion:

For each patient who requires removal of anterior teeth, there are a multitude of treatment considerations. Cosmetic demands, functional need, treatment sequencing; timeliness and affordability are some primary concerns that must be addressed on an individual basis.[4]Simple removable tissue supported dentures, c) Post-operative hygiene maintenance instructions were given to the patient and recalled after 1 week and 1 month for checkup.

temporary full coverage fixed partial dentures and bonded fixed partial dentures may be us**ed as transitional prosthesis.**[5]Removable prosthesis seems to be one of the suitable treatment options, but patient compliance is generally a major problem. As a result, an objectionable loss of soft and hard tissues in the extraction area normally occurs.[6] This approach would also permit utilization of a patient's natural crown as a pontic for an immediate bridge, with little or no need to perform complicated laboratory procedures. One major advantage of retaining the patient's natural crown is that, the patient can better tolerate the effect of tooth loss. NTP offers excellent color, shape, and size match and thus enhances the psychological and social acceptability of the patient with a minimal cost involved.[3] In this case, ovate pontic design was given that results in the **creation of emergence profile.** A variety of periodontal splint materials such as the multi-flex orthodontic wires, steel meshes, glass or fiber splint etc. can be used to splint the pontic to the adjacent stable ab**utments via composite resin.**[7-8]Pontic was splinted to adjacent teeth with the use of composite reinforced with ribbond fiber material. Ribbond is a reinforced ribbon made of ultrahigh molecular weight polyethylene fiber that has an ultrahigh modulus. Polyethylene fibers improve the impact strength, modulus of elasticity, and flexural strength of composite materials [9]and it is biocompatible, inert, colorless, and translucent in nature.[10]

Clinical implications

This technique gives the clinician to achieve immediate excellent aesthetic results, as the extracted tooth is replaced on the same day of removal and this will help in contouring of the edentulous site for the ovate pontic design. Additionally no laboratory work is required; it also reduces psychological and social trauma to the patient and restores the function immediately.

Conclusion

The technique of using natural tooth as pontic with resin composite-reinforced ribbond splinting material is an esthetic, conservative, cost effective and practical method for immediate restoration of missing anterior tooth.

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Pictorial

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