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A reason to smile

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Abstract

Dentistry plays an important part for the overall cosmetic upgrade, since face and smile play an important role in changing a person's appearance and self-esteem. Restoration of severely worn dentition is one of the most challenging procedure. In order to successfully regain the condition, one must gain insight into how the teeth arrived at this state of destruction. Emphasis must be placed on the evaluation of occlusal prematurities preventing condylar seating into the centric relation position. The objectives should be preservation of the remaining tooth structure, restoration of optimum function, esthetics with least invasive procedures, and cost effective. This case report demonstrate patient who had badly mutilated teeth, which was managed successfully.

Keywords: Full mouth rehabilitation, worn dentition, vertical dimension, esthetics, mutilated

Introduction

Technical innovations in the last 20 years have forced dentists to acquire new knowledge and techniques to stay in step with the advances in the profession. The rationale of treating a full mouth patient case involves a multidisciplinary approach. Mutilated tooth is those teeth which are grossly destructed, weakened and/or badly broken down where the remaining tooth structure is less than the amount of tooth loss^[1]. The etiology includes long standing caries, traumatic fractures or recurrent caries. The partial or total absence of teeth not only makes mastication difficult but also affects dentition in a complex manner and also patient's quality of life. Rehabilitation of the dentition in such patients involves converting all the unfavorable forces on the teeth, which has inevitably induced pathologic damage, in to favorable forces which helps to regain the normal function, which in turn promotes healthy oral condition^[2]. These favorable forces increase the tolerance of the supporting masticatory structure. Restoration of normal and healthy function of the masticatory apparatus is the ultimate goal of full mouth rehabilitation^[3]. This article presents one such case report of badly worn out dentition, which was successfully treated.

Case Report

A 20-year-old female patient reported to the department of conservative dentistry and endodontic with chief complaint of difficulty in chewing, restricted mouth opening and poor appearance of her existing upper and lower dentition with an unpleasant smile. The medical history presented with a history of rheumatoid arthritis for which she is undergoing treatment since childhood. Intra-oral examination revealed grossly destructed tooth structure with missing upper and lower posterior teeth (FIG I). After thorough examination, OPG was taken and the treatment protocol was explained to the patient in detail. After informed consent, endodontic therapy was carried out in 12, 11, 21, 22, 24, and 25 in the upper arch and in the mandibular arch root canal therapy was performed in 35, 34, 33, 32, 31, 41, 42, 43, 44 and 45 in multiple visits (FIG II).

The restoration of severely compromised teeth should be managed based on scientific evidence. Various studies have taken different perspective on this issue. In this patient, based on Estevas *et al.* (2011), clinical criteria and guidelines, post space preparation was carried in 12, 11, and 22 and also in the lower anteriors (42, 41, 31, 32, 33) (FIG III & IV). This classification enables the clinician to identify and classify extensively damaged teeth, which in turn helps to assess proper treatment plan and prognosis. Prefabricated glass fiber post

(Reforpost, Angelus, Brazil) was luted in place with Multilink resin cement (Ivoclar Vivadent) and core build up was done with Z 350 (3M). On her next consecutive appointment, tooth preparation of both upper and lower teeth was done. Following tooth preparation, bite registration was done (EXABITE II; GC Corp, Tokyo, Japan) (FIG V & VI).

Then the patient's centric relation was recorded using UTS face bow and the recorded relation was transferred to a semi-adjustable articulator (Stratos 300). Mock wax up was done. The temporary prosthesis was fabricated with heat cure acrylic and polished (FIG VII & VIII). The patient's tooth preparation was temporized for 2-3 weeks. After 3 weeks of temporization, final impression was taken. Repeat bite and centric relation was recorded for confirmation. Then the final prosthesis, porcelain fused ceramic bridge was processed and luted with glass ionomer cement (FIG IX & X). It is 6 months since the completion of the treatment and the patient is very happy with the outcome of the treatment.



Discussion

The ultimate goal of every patient is to maintain a good health of the total masticatory system. The reason for the poor oral hygiene of this patient could be due to her contributing medical history. The main oral manifestation of rheumatoid arthritis is xerostomia. Patient with long standing history of rheumatoid arthritis receiving drug therapy shows increased frequency of gingival bleeding, deeper periodontal pockets, more severe loss of epithelial attachment and tooth loss [4]. While treating such patients, for prosthetic therapy to be successful, the dentist must establish an effective

communication with the patient. Effective communication between patient and the dentist is one of the basic parameter for successful treatment [3, 2]. This allows the patient to obtain information related to the risks, benefits and costs of the treatment. A suitable process of encouragement will enable the patient to cope with the treatment and ensure good compliance and adaptation to therapy.

Management of badly broken teeth using fixed or removable prostheses is complex and among the most difficult cases to restore. In these patients, assessment of the vertical dimension is important for the management, and utmost careful treatment planning is required. In our day-to-day clinical practice, we come across patients requesting prosthetic rehabilitation to restore unstable occlusion resulting from extensive tooth wear and early loss of permanent teeth [5]. However, a limited interocclusal space often creates a challenge to dentist for restorative treatment because the space required for restoration is unavailable, and it is probable that the final retention and resistance form will be inadequate. The more reliable method in such situation is to increase the vertical dimension of occlusion (VDO) in order to provide space for restorative materials, rectify anterior teeth relationships, enhance the aesthetic tooth display and minimize the need for biologically invasive clinical surgery [6, 7]. But, some authors report that the VDO is a constant dimension throughout an individual's life. However, some authors argue that the dynamic nature of the stomatognathic system is an adaptation by the masticatory system in response to progressive pathologic changes in tooth substance.

This case report describes a patient with severely worn anterior teeth and early loss of posterior teeth, resulting in a restricted restorative space. The patient's chief complaint was poor chewing function and esthetic appearance. When managing a full mouth restoration case, extra attention should be given to the force resulting in the wear breakage or joint dysfunction should be considered to ensure a lasting restoration. In this case, during the provisional stage, the patient adapted smoothly and no muscles or temporomandibular joint related symptoms or signs were noted. Articulated study casts and diagnostic wax-up provide important information, which is helpful for the evaluation of treatment options. When jaw muscles are in harmony and there is no premature contact of teeth, occlusal stability is achieved [8]. The goal of occlusal dentistry is to balance the masticatory force, which in turn prevent uneven forces or excessive contacts from breaking down the dentition [9]. Several issues need to be assessed and solved if necessary to restore a stable and balanced occlusion. This includes but not limited to anterior guidance performance of the masticatory musculature, TMJ dysfunction, occlusal vertical dimension and condylar function [10]. finally, we met the treatment goal of rehabilitation of the chewing function, and a satisfying smiling appearance for this patient.

Conclusion

Dentistry has long been a skilled craft, but now there is much more than that. Reorganized approach in full mouth rehabilitations should restore the structural and functional integrity of the dental arches that are compromised by decayed, missing, or broken teeth. It should be more intellectually and technically planned and executed to optimize oral function, occlusal stability and esthetics. The patient has to be treated not only by correcting worn out, broken or discolored teeth but also require to optimize the oral function. The rehabilitation using restoration of anterior

crowns and RPD providing posterior support is affordable and common for many patients who require the treatment of teeth wear because of economic issues. However, regular check-up for the occlusal adjustment and RPD fitting is essential.

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