MENDING AESTHETICS IN ANTERIOR REGION-A CASE REPORT

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ABSTRACT

Lately esthetic rehabilitation has come to be a demanding treatment as a way to correct malposed as well as missing anterior dentition, the advent of creating an esthetic smile has become a part of routine dental practice. An attractive or appealing smile sincerely enhances the recognition of an individual in our society with the aid of enhancing the initial impact in interpersonal relationships. Any esthetic correction calls for right expertise and knowledge. Such rehabilitation can be achieved successfully with the aid of numerous treatment approaches. Orthodontic treatment is one of the most conservative approach for such cases but it is not an acceptable treatment option for most of the patients due to various reasons like long treatment time, financial constraints, appearance during the therapy, and relapse after the treatment. Alternatively, endodontic approach combined with prosthodontics offers a brief, reliable and economic treatment modality for such cases. Placement of implants has also become a treatment of choice for replacement of teeth in esthetic zone with advantages like preservation of unrestored adjacent teeth and halting the resorption of edentulous spaces to provide support for the prosthesis. This case report illustrates the multidisciplinary approach for rehabilitating aesthetics in anterior region.

KEYWORDS: Esthetics, Anterior, Multidisciplinary, Rehabilitation.
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INTRODUCTION

Since the early 1990s, vital upgrades in dental technology and cosmetic dentistry have been developed as a response to the increasing demand for superior esthetics and biocompatibility. Parallel to the increasing demand for cosmetic dentistry, significant advances in dental implant therapy were also developed, particularly for anterior single-tooth replacement.[1] Smile is a curve that sets everything straight[2].Smile is an important component of a person's overall appearance and well being. It is the composition of the skeletal ,dental and soft tissues structures of the face. It is the greatest beauty asset of an individual.[3] The increasing demand for esthetics has encouraged the practitioners to develop new methods and techniques for malposed and missing anterior teeth.[2] Absence and malpositioning of anterior teeth not only hamper the esthetics but also affect the phonetics, incising of food and most importantly the anterior guidance which is a necessity for the protection of posterior teeth.[4]Thus, an integrated

assessment of each component should be performed when the prosthetic rehabilitation is necessary.[5] Longevity of the treatment is not only dependent upon the precision and skill with which the work is carried out, but also to a large degree upon a proper assessment and diagnosis.[4] This case report illustrates the multidisciplinary approach for rehabilitating aesthetics in anterior region.

CASE REPORT

A 42 year old female patient reported to the department of Prosthodontics with the chief complaint of missing and malposed anterior teeth. Extra oral examination revealed incompetent lips due to malposed anterior teeth .

Intra oral examination: Missing teeth 12,1 4, 15. Malposed teeth 11, 21. RCT with 22, 17 and dislodged crown 13 which had migrated in 12 region (Fig 1,2,3) .

Patient was advised Orthopantomograph (OPG) and Cone beam computed tomography (Fig.4). Based on intra oral and radiographic evaluation patient was given following treatment options:

i) Orthodontic treatment for the malposed teeth followed by removable/fixed prosthesis for missing teeth.

ii) Intentional RCT irt 11,21followed by PFM/All Ceramic crowns from right lateral incisor to left lateral incisor and removable /fixed prosthesis for missing teeth.

The patient was not willing for orthodontic as well as removable treatment option. So the final treatment plan chosen for the patient was intentional RCT irt 11, 21 followed by all ceramic crowns for 11,21,22,13 and placement of implant in 13 and 15 region.

CLINICAL PROCEDURE:

STAGE 1 - IMPLANT PLACEMENT

Implants (NORIS Int. Hex Ti. Implant) of size 3.75x11mm were placed in the region 13 and 15 using surgical stent (Fig-5).

STAGE 2 - INTENTIONAL RCT AND TOOTH PREPARATION

Intentional RCT was done with 11,21 followed by tooth preparation irt 11, 21, 13 and 22 for receiving all ceramic crowns(Fig6). Excessive labial reduction was done for 11, 21 as compared to palatal reduction in order to correct the alignment of teeth in the final prosthesis.13 was prepared in such a manner that the final crown would replace 12 after which the final impression was made with alginate.

Fig.1-Intra oral frontal view

Fig.2-Intraoral right lateral view

Fig.3-Intra oral left lateral view

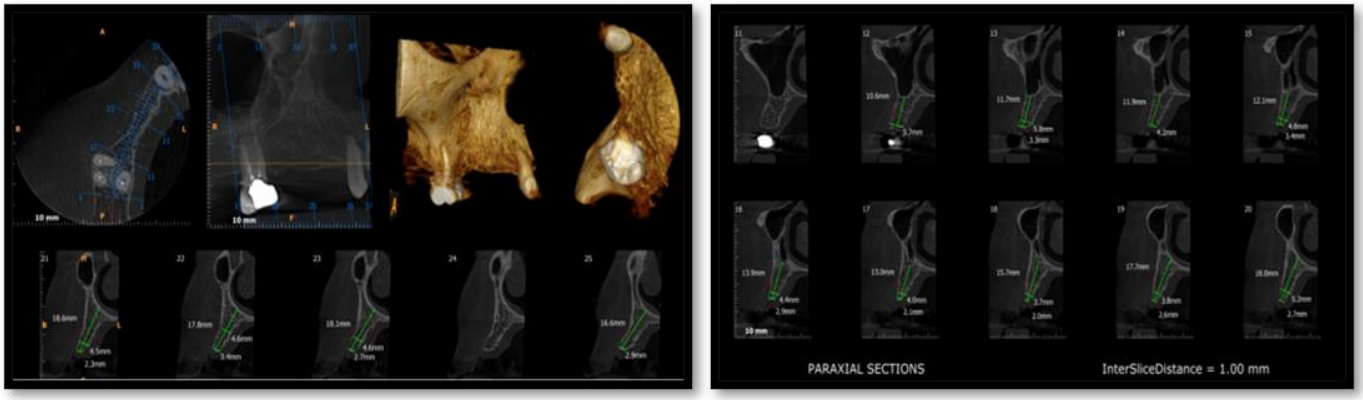

Fig.4-CBCT

Patient was given heat cure provisional crowns to assess alignment, esthetics and comfort (Fig 7).

STAGE 3 - SECOND STAGE IMPLANT SURGERY

After six months of implant placement, healing abutments of collar height 4.6mm were placed. Two weeks later final impression was made using single step putty wash technique for implant as well as all ceramic crowns (Fig 8).

STAGE 4 - FINAL IMPLANT PROSTHESIS

Following the final impression jig trial, metal trial and bisque trial was done. Final prosthesis was screwed and access hole was filled with GIC. Occlusion, laterotrusive and protrusive movements were checked and adjusted. (Fig 9).

STAGE5- CEMENTATION OF ALL CERAMIC CROWNS

After the completion of implant prosthesis, coping trial was done for the all ceramic crowns followed by which the final crowns were cemented using resin cement (Fig.10a,b) . After cementation, patient was recalled after 1week,1 month and 6 months.

Fig.5-OPG showing implant placement in 13 and 15 region

Fig.6-Prepared tooth irt 11,21,22.13

Fig.7-Provisional crowns

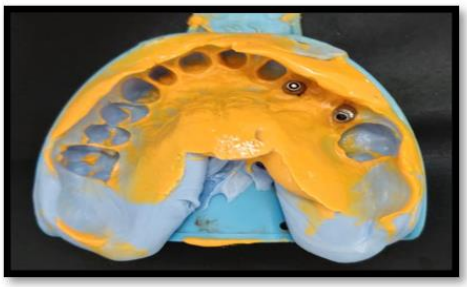

Fig.8- Final impression

Fig.9-screw retained implant prosthesis

Fig.10a,b- Cementation of all ceramic crowns from 12 to 22 (occlusal and frontal view)

DISCUSSION

Missing and malposed teeth in anterior region not only deprives the patient of esthetics but also emotionally in terms of social acceptance. Restoring missing teeth in anterior region has been a challenge for the dentist as it has to accomplish various expectations of patient like esthetics, speech and function.[6,5] Several treatment options are available for replacing anterior teeth which includes implant supported prosthesis, conventional FPD or RPD.[7] Conventional FPDs which requires support from adjacent abutments is the most common treatment modality for replacing missing teeth. But in certain clinical situations where the primary abutments are weak, secondary abutments are used for the support in order to achieve success of FPD. As against this implant prosthesis do not require any involvement of teeth adjacent to the edentulous areas.[8] In this case report, implant prosthesis was chosen over conventional FPD because of the absence of healthy adjacent abutments and also it would result in a long span prosthesis.

In cases of malposed anterior teeth, Endodontic therapy combined with Prosthodontics provides a quick, reliable and cost effective treatment

option with the desired outcome.[9] Tronstad L et al reported that endodontically treated teeth are more susceptible to fracture, not because of pulp removal per se, but due to the increased strain resulting from tooth substance loss, so full coverage crowns have been considered to restore the damaged teeth .[10] In some cases, in order to correct malpositioned teeth in the right alignment reduction of partial or all of the tooth crown is required. As a result endodontic treatment needs to be performed over the involved dentition, although these teeth are normally intact and in vital condition. Therefore, several important considerations in determining the post-endodontic restorations like protection and conservation of the remaining tooth structure to reduce stress over teeth, esthetic condition, inclination as well as achieving the natural tooth morphology are needed.[11]

Following the treatment plan formulated above, successful outcome was achieved with patient satisfaction (Fig.11).

Fig.11-Pre and Post operative view of the patient

CONCLUSION

This case report illustrates the multidisciplinary approach for rehabilitating aesthetics in anterior region.

A meticulous diagnosis and treatment planning is mandatory for achieving a successful treatment outcome, keeping in mind the patient expectations.

REFERENCES

1) Bonnard P, Hermans M, Adriaenssens P, Daelemans P, Malevez M. Anterior Esthetic Rehabilitation on Teeth and Dental Implants Optirnized with Procera@ Technology: A Case Report. J Esthet Restor Dent. 2001;13(3):163-171.

2) Ron A, Karthik J, Pai SV, Mathew PS, Nadig R. Esthetic Makeover-A Multidisciplinary approach: A case report. IJADS 2016; 2(3): 23-25

3) Alrizqi A, Mohammad YA, Albounni R. Smile Design: Assessment And Concept. IJCR. 2015; 7 (12):24746-24750.

4) Gupta R, Dahane T, Godbole SR, Shukla A. Esthetic Correction: A Case Report. IJCMR. 2017; 4 (4):808-810.

5) Shetty KS, Mulla A, Zahid M ,Mohammad F. Esthetic Rehabilitation Of Anterior Missing Teeth With Ridge defect Using Zirconia Fixed Prosthesis-A Case Report.IJSR.2019;8(5) : 24-26

6) Rani S, Devi J, Jain C, Mutneja P, Verma M. Esthetic Rehabilitation of Anterior Teeth with Copy-Milled Restorations: A Report of Two Cases. Case Rep Dent.2017;2017:1-5.

7) Haralur SB, Al-Faifi AH. Use of CAD/CAM in esthetic restoration of badly decayed tooth. Case Rep Dent. 2012;2012:608232.

8) Bahat Z, Mahmood DJ, Vult von Steyern P. Fracture strength of three-unit fixed partial denture cores (Y-TZP) with different connector dimension and design. Swed Dent J.2009;33(3):149-59.

9) Kim J et al. Restorative space management: treatment planning and clinical considerations for insufficient space. Practical procedures & aesthetic dentistry. 2005; 17(1):19- 25.

10) Tronstad L, Asbjørnsen K, Døving L, Pedersen I, Eriksen HM. Influence of coronal restorations on the periapical health of endodontically treated teeth. Endod Dent Traumatol. 2000; 16(5):218-21.

11) Schwartz RS, Robbins JW. Post Placement and Restoration of Endodontically Treated Teeth: A Literature Review, Journal of Endodontics. 2004; 30(5):289-301