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Case Report

ESTHETIC AND FUNCTIONAL REHABILITATION OF A PATIENT WITH A MAXILLARY ANTERIOR DEFECT USING ANDREW'S BRIDGE- A CASE REPORT

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ABSTRACT

Rehabilitating partially edentulous patients with anterior maxillary bone and ridge defect have always posed a challenge to the prosthodontist. The demands include the need for profound esthetics, difficulty in closing the defect, correcting the asymmetry of the face caused due to the defect and maintenance of proper oral hygiene in respect to that particular region. As the conventional fixed dental prosthesis does not meet up to the prime requisites of rehabilitating the defect, a fixed removable prosthesis with a bar between the terminal abutments on each side proves to be an innovative solution to restore esthetics and function.

INTRODUCTION

Loss of teeth invariably at times leads to loss of a variable amount of adjacent soft and hard tissues.[1] Defects can be created by trauma, congenital defects or surgical resections of benign or malignant neoplasms. This case report focuses on the prosthetic rehabilitation of an anterior defect using a fixed-removable partial denture using an Andrew's bridge.

CASE REPORT

A 40 year old male visited the Department of Prosthodontics and Crown and Bridge, IDST, Modinagar with the complaint of a fractured prosthesis in the upper front tooth region. The patient was previously treated with a long span bridge in respect to the same, which ultimately fractured within a span of 1 year. The patient was not willing for any invasive procedures and his main concern was esthetics. Extraoral examination indicated slight asymmetry in relation to the upper lip and the gingival cleft was evident on smiling. [Fig. 1] Intraoral examination revealed missing 21, 22, 23 and 24 and he presented with a class III ridge defect[3].[Fig. 2] The reasons anticipated for its fracture could have been the improper crown root ratio, the vertical cantilever produced and the offset forces invariably loading on it. The patient was convinced for the option of a fixed-removable prosthesis with an Andrew's Bridge using 11 and 25 as abutments and a removable partial denture for the four missing teeth.

Fig 1 Visible asymmetry in relation to the upper lip

Diagnostic impressions were made with alginate impression material and the casts were poured. The abutment teeth were prepared for metal ceramic crowns and the final impression was made with the putty-wash technique followed by temporization. [Fig. 3] Master casts were poured in dental stone. [Fig. 4]

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Fig 2 Class III ridge defect in the maxillary arch

Fig 3 Impression made with putty-wash technique

Fig 4 Master cast obtained

After the die preparations and wax-up were done, the casting procedure was carried out. The fit of the copings along with the bar was checked on the cast before being tried out intra-orally. [Fig. 5] Intra-orally the fit was checked using a pressure indicating spray on the intaglio surface [Fig. 6]

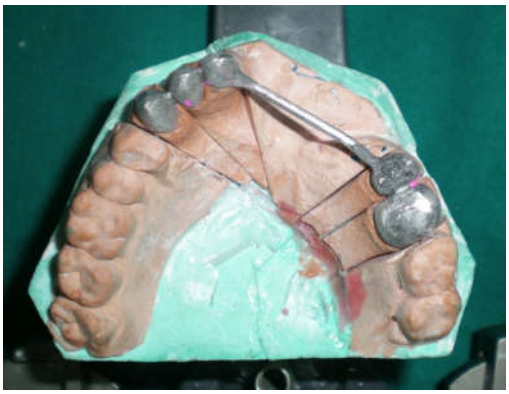

Fig. 5 Fit of copings along with bar checked on the cast

Fig 6 The intaglio surface of the casted copings along with bar after being checked with pressure indicating spray

The bridge was fabricated [Fig.7] and the temporary cementation was done using zinc-oxide eugenol cement. New impressions were made using alginate after blocking out the undercut with putty for the fabrication of the removable component of Andrew's bridge [Fig. 8].

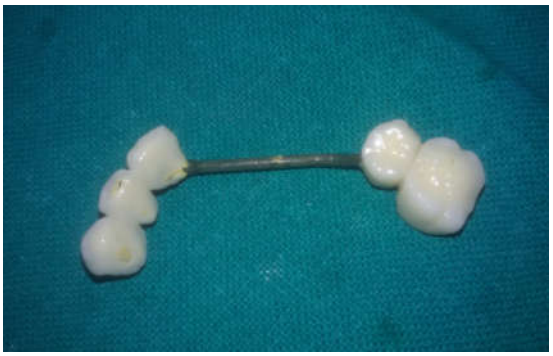

Fig 7 The completed bridge incorporating the bar

Fig 8 Block-out of the undercut area using putty

The try-in of the conventional RPD was carried out [Fig.9 and 10] followed by its final processing [Fig. 11] and a groove were made on the intaglio surface of it for incorporating the retention sleeves. [Fig 12]

Fig. 9 Try-in of conventional RPD

Fig 10 The fixed and removable components of the Andrew's bridge

Fig 11 The conventional acrylic RPD

Fig 12 Trimmed intaglio surface for incorporating retention sleeves

The retention sleeves were placed over the bar and the area above the bar was blocked-out with wax [Fig.13]. The RPD was relined intra-orally using auto-polymerizing resin and the retention sleeves were picked up in the intaglio surface of the denture [Fig.14 and 15]. The final prosthesis was checked intra-orally and the final cementation of the bridge was done by glass-ionomer cement [Fig.16].

Fig 13 Undercut area blocked out with wax

Fig 14 the intaglio surface of RPD being relined with auto-polymerizing resin

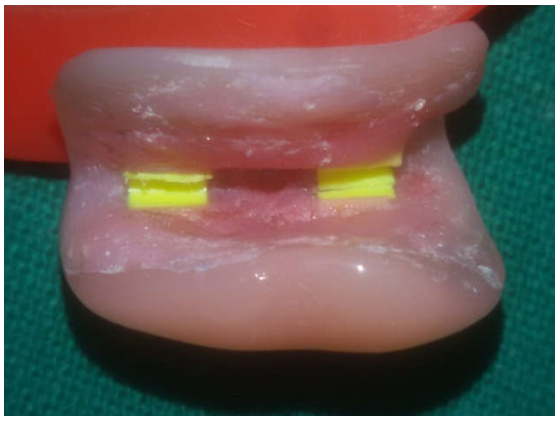

Fig 15 The RPD incorporating the retention sleeves

Fig 16 The Andrew's bridge in situ

The patient was trained to properly insert and remove the RPD over the fixed component of the Andrew's bridge. Meticulous oral hygiene was instructed to be performed. The patient was periodically recalled for the evaluation of the success of the prosthesis over the past 1 year.

DISCUSSION

Anatomic defects are difficult to be managed as they tend to compromise the esthetics. A proper case selection forms the basis of a successful treatment plan. Dr. James Andrews of Amite Louisiana (Institute of Cosmetic Dentistry, Amite, LA, USA) was the first to introduce a fixed-removable prosthesis.[2] It is called as Andrew's Bridge and it consists of a fixed retainer and removable pontics. The pontic assembly can

be removed by the patient for oral hygiene maintenance. Andrew's bridge is indicated in cases of[3]:

- Large ridge defect due to congenital reasons, trauma or surgery
- Cleft palate patients with congenital or acquired defects
- Where abutments are capable of supporting a fixed partial denture
- The fabrication of a conventional fixed partial denture prosthesis is precluded because of the ridge defect

Andrew's system provides maximum aesthetics and optimum phonetics especially when alignment of the opposing arches and/or aesthetic arch position of the replacement teeth create difficulties.[4,5] The frictional fit of the walls of bar and the sleeves incorporated in it provide optimizing retention. Another advantage of the Andrew's bridge is that it can be removed by the patient for hygienic purposes.[6]

CONCLUSION

In conditions, where conventional removable or fixed prosthesis does not turn up to be a feasible option, a third treatment option of Andrew's Bridge proves successful in the prosthodontic rehabilitation by restoring function, esthetics as well as closure of the defect. Being completely tooth borne, the Andrews Bridge provides more stability and retention.[7,8,9] Since the prosthesis is retained by a bar, the flange does not have to be extended palatally for support. The normal taste perception is also maintained making it more patent compliant.

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