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ANDREWS BRIDGE: REHABILITATION OF ANTERIOR TEETH WITH PREFABRICATED PRECI -HORIX ATTACHMENT

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ABSTRACT
The level of aesthetic requirement in clinical practice has increased over the past decade, and this has made it necessary for dentist to explore this field in order to satisfy the existing demand in this field. There are various causes of tooth loss including caries, periodontitis, trauma, and extraction as a part of surgical excision of tumours. The various treatment option for the anterior rehabilitation are implant, fixed dental prosthesis and the removable dental prosthesis. Andrews bridge is yet another aesthetic option for a fixed removable prosthesis for improved aesthetics and function. This case report shows the fabrication of a fixed-removable partial denture using the Andrews Bridge philosophy where a removable prosthesis is retained by a bar and sleeve attachment to fixed retainers on the either side of the edentulous space. This prosthesis is designed to meet the requirements for aesthetics, comfort, phonetics, hygiene, and favourable stress distribution to the abutments and soft tissue.

KEYWORDS: Andrew's Bridge, Preci Horix attachment, fixed-removable partial dentures.

INTRODUCTION
The loss of anterior teeth not only affect the aesthetics but also affect psychology and phonetics of the patient. Proper diagnosis and treatment planning are at most important in the anterior rehabilitation cases. The treatment consideration for anterior rehabilitation are implant prosthesis, fixed dental prosthesis and a removable fixed prosthesis. Implant and fixed dental prosthesis have their own indications. Andrews bridge was introduced by Dr. James Andrews of Amite Louisiana (Institute of Cosmetic Dentistry, Amite, LA, USA).[6] It consists of a fixed retainer and removable pontics. The fixed removable partial denture has a pontic assembly that is removed by the patient for preventive maintenance. The retainers are either porcelain fused to metal (PFM) or full veneer metal, which are permanently cemented to the abutments. The retainers are joined with prefabricated castable bars and then cast together, or a prefabricated metal bar is soldered to the metal copings after casting. The removable pontics are retained by a clip on the intaglio surface which fits precisely over the bar attachment. It provides excellent retention for removable prosthesis. This case report shows the fabrication of a fixed-removable partial denture using the Andrews Bridge philosophy with Preci Horix attachment. This prosthesis is designed to meet the requirements for aesthetics, comfort, phonetics, hygiene, and favourable stress distribution to the abutments and soft tissue.

CASE REPORT
A 47-year-old male patient reported to the department of prosthodontics and crown & bridge at Tatyasaheb kore dental college and research centre with a chief complaint of missing anterior teeth. Past medical history was not relevant. Past Dental history reveals previous fixed dental prosthesis with 11, 12, 13 and 21, 22, 23 were extracted because of caries. Extraction of 11 was due to presence of mobility. When the patient come into the clinics tooth preparation was done with 12 and 13 and the seibert's class 2 defect present with the edentulous ridge. Since the tooth preparation has already done with 12 and 13 with alveolar defect in the anterior region the best prosthetic treatment decided for the patient was Andrews bridge.

Procedure
1. The oral hygiene of the patient was not satisfactory, so he was prescribed oral prophylaxis and chlorhexidine mouthwash rinses.

2. Diagnostic impressions of the maxillary and mandibular arches were made using irreversible hydrocolloid impression material and study casts were poured. The casts were mounted on a semi-adjustable articulator with facebow transfer and in maximum intercuspation using an interocclusal record. Diagnostic wax-up was done, and a treatment plan was formulated. (Fig- 02)
3. Mandibular plane correction was done with proper inform consent with the patient.
4. Tooth preparation modification was done with 12,13 and 24 to receive PFM crowns that will be connected with a bar attachment. (Fig-03)
5. The gingival retraction was done using chemico-mechanical method, and final impressions were made using poly-vinyl siloxane impression material and two-stage putty wash technique. (Fig-04)
6. The master casts were poured using Type-IV gypsum product and were mounted on a semi-adjustable articulator.
7. Wax-up was done for PFM retainers with 12, 13 and 24, and they were connected with a prefabricated castable plastic bar attachment (Preci Horix). (Fig-05)
8. The bar was positioned parallel to the ridge and was attached on the palatal aspect of the retainers. The bar was placed such that 2-3 mm of space was left between the bar and the crest of the alveolar ridge to facilitate maintenance of hygiene by the patient.
9. The assembly was casted in cobalt-chromium alloy. Metal trial was done for the maxillary prosthesis. Shade selection was done for matching the shade of ceramic restorations with that of acrylic denture teeth. (Fig- 07)
10. With the fixed components of the maxillary prosthesis in position, an irreversible hydrocolloid impression was made, and dental stone cast was poured for the processing of the RPD. (Fig- 08)
11. After wax up, investing and dewaxing of trial dentures, the Preci-Horix plastic fabricating rider clips was placed on the bar on the master cast at the desired location (fig-09) and then Preci-Horix metal housings were placed over the fabricating rider clips. The under cuts of the retentive bar adjacent to the metal housings were blocked with dental stone and packing was done with heat cure acrylic the dentures were processed, finished and polished.
12. The retention sleeves/clips were then placed in the metal housing with the help of a special seating tool supplied in the attachment kit. (Fig- 10)
13. The special shape of the metal housing provides secure retention of the clips.
14. The patient was scheduled for follow-up visits every 3 months.

Fig- 01 Pre operative view

Fig- 02 Diagnostic mounting

Fig- 03 Tooth preparation with 12,13 and 24

Fig- 04 Preci Horix Attachment assembly

Fig- 05 Plastic bar attached to wax up

Fig- 06 Metal try In

Fig- 07 Fixed retainers along with bar

Fig- 08 Try In

Fig- 09 Metal housing attached for processing

Fig- 10 Yellow retentive sleeves

Fig- 11 Final prosthesis

DISCUSSION

Andrews Bridge has both fixed and removable properties. Andrew's system provides maximum aesthetics and optimum phonetics in cases involving considerable supporting tissue loss, jaw defects and when the alignment of the opposing arches and/or aesthetic arch position of the replacement teeth create difficulties. Another favourable property of the Andrews bar system is that it can be removed by the patient thereby providing access for maintaining hygiene around the abutments and surrounding tissues.6 Andrew's Bridge provides a better therapeutic and emergency treatment.7 Since the prosthesis is retained by a bar retainer, the normal perception of taste is maintained as the flange need not to be extended palatally for support.[6]

In conditions, proper diagnosis of the condition is at most important and treatment planning was done to fulfil the aesthetics and functional demand of the patient. where conventional removable or fixed prosthesis is not a feasible option. Literature shows limited failure of the prosthesis. The failures are mainly due to inadequate soldering. However, this was completely eliminated by attaching retainers to the bar in a single casting.[7] The patient was comfortable with the final outcome and had pleasing aesthetics and phonetics.

CONCLUSION

Andrews Bridge System is a fixed removable prosthesis that is indicated in patients with large ridge defects with maximum aesthetics, hygienic and good fit, along with minimal trauma to soft tissues. The author in this case report has attempted to describe in detail the chairside and laboratory procedure involved in the fabrication of Andrews bridge using Preci Horix attachment. The success of the Andrews system stems from the fact that it allows the pontic to be entirely ridge borne and only retained and stabilized by the bar.

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