

A novel approach in interdisciplinary esthetic space management

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Esthetics is a major concern in the patients undergoing any treatment especially in the anterior region. Orthodontic treatment and implant therapy has staged treatment protocol where the treatment period varies from patient to patient, depending on case scenario. Implant placement

during the orthodontic treatment and subsequent esthetics and space needs to be maintained till restoration of the implant. In the current clinical situation, Riding Pontic is the best esthetic option, where space is maintained for the implant restoration. This case report explains the use and fabrication of riding pontic in an interdisciplinary treatment approach.

Key Words: Space management; Riding pontic; Interdisciplinary treatment; Esthetic space management; Temporary prosthesis; Implant placement

INTRODUCTION

The esthetic space management in cases with retained deciduous tooth, missing tooth and presence of edentulous space during course of implant treatment, orthodontic and other interdisciplinary treatment approach, the primary challenge of a clinician is maintaining pleasing esthetics during the course of the treatment [1,2].

Edentulous space may be due to missing tooth or created because of removal of over retained deciduous tooth during the course of the combined treatment approach. Riding pontics are temporary prostheses used during fixed orthodontic treatment in patients with missing teeth and can be used for any missing teeth. It is especially good when one or more anterior teeth are missing [3,4].

CASE DESCRIPTION

A female patient aged 19 years diagnosed with angles class II div I malocclusion on a class II skeletal base with average maxilla and retrognathic mandible Figure 1 there was proclination of upper incisors and spacing in lower incisors with retained lower right deciduous incisor as shown in Figure 2. In the initial phase of orthodontic treatment, the deciduous tooth was retained for space maintenance subsequently during the course of the orthodontic treatment the deciduous tooth was extracted and placement of implant was planned. To maintain the esthetics and the space it was planned to use riding pontic in the interdisciplinary treatment approach. Deciduous mandibular incisor was extracted followed by placement of MIS implant with 3.3/11.5 dimension following standard drilling procedures Figure 3 and Figure 4. During the second stage, Healing collar was placed and frenotomy was done to relieve the high frenal attachment in the mandibular anterior region. The riding pontic was successful in providing pleasing esthetics and also maintaining the space during the course of orthodontic treatment and restoration of the implant.



Figure 1: Patient Extraoral Profile



Figure 2: Retained deciduous tooth between 31 and 42

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Figure 3: Post operative after implant placement

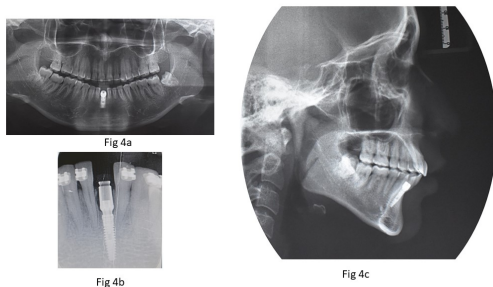


Figure 4: Post operative radiographs after implant placement

FABRICATION

The interdisciplinary treatment approach in this case involved the retained deciduous tooth was extracted during the course of the orthodontic treatment, subsequently implant placement was done which would allow the vertical development of the alveolar process and maintains the bone density and morphology of the alveolar process and during the implant healing period riding pontic was used for space management of the edentulous space.

The steps followed in the fabrication of riding pontic are -

1. First step- the extraction of the deciduous tooth and implant placement was done in the edentulous site. After the soft tissue healing the fabrication of the riding pontic was done.
2. Shade-selection: The shade of the acrylic pontic was matched with adjacent natural tooth color.
3. Tooth size and shape selection: The adjacent tooth served as a guide to select the mesiodistal width of the riding pontic.
4. Bracket bonding: The bracket was bonded in position on the pontic according to the contralateral tooth.
5. Pontic trial: The selected pontic with the bonded bracket was positioned on the edentulous space and evaluated for exact position and evaluated for its relation with adjacent tooth and soft tissues [5, 6].
6. Pontic ligation: The pontic was firmly ligated to the arch wire thereby avoiding any uneven movement or play between the pontic and the arch wire as shown in Figure 5.



Figure 5: Riding pontic engaged to arch wire

DISCUSSION

The management of space due to retained deciduous tooth or missing tooth is common clinical scenario encountered during orthodontic treatment [3]. In this interdisciplinary treatment approach, in the first phase the deciduous tooth was retained to manage the space during the initial phase of the orthodontic treatment. In next phase the tooth was extracted and implant was placed and subsequently during the healing phase of the implant and finishing of the orthodontic treatment the edentulous space needed to be maintained such that replacement was esthetic and does not interfere with the orthodontic tooth movement. Riding pontic was the most economical and simplistic approach to be used for the management of the space. Maryland bridge or a removable partial denture both would have interfered with the orthodontic tooth movement and the healing soft tissues over the implant. Advantages of using riding pontics [6]:

- Provides psychological comfort and also patient social life is not hampered due to better esthetics during the treatment.
- Development of deleterious habits such as tongue thrusting and defective speech can be avoided.
- Mesiodistal width of the missing tooth is maintained till its replacement

CONCLUSION

Limited case reports are available on the use of riding pontic in an orthodontic and implant interdisciplinary treatment approach. This case report highlights the novel and economical approach of using riding pontic for space management during orthodontic treatment and subsequent restoration of implant.

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