



Aesthetic management of missing anterior teeth in Binder Syndrome - A Case report

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General Note

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ABSTRACT

Poor esthetics and its management is a vital orthodontic goal in adults is one of the prime concerns during orthodontic treatment is maintaining the esthetics. It becomes more mandatory in cases where there are anterior teeth/tooth losses and during orthodontic treatment may lead to psychosocial problems. One of the rare conditions is the Binder Syndrome, which is, one of the rare conditions that shows midline cleft and at times missing premaxilla consequence of which is missing anterior teeth. Orthodontic treatment aimed at alignment of teeth while maintaining space for prosthesis of the missing anterior teeth becomes an integral part of patient management in such cases. Utilizing the riding pontics during Orthodontic treatment helps in reducing the psychological trauma particularly in patients with Binder Syndrome.

Keywords: Binder Syndrome; Riding Pontic; Psychosocial trauma; cleft.

1. INTRODUCTION

Poor esthetics and its management is a vital orthodontic goal in *Binder Syndrome* (Venkatesh et al., 2016), which is one of the rare conditions that shows midline cleft and at times missing premaxilla consequence of which is missing anterior teeth. Thus, patients with Binder Syndrome suffer from psychosocial trauma, owing to poor facial esthetics due to missing anterior teeth. These cases have already undergone multiple surgical procedures like lip repair, bone grafting and maxillary advancement etc at specific time depending on the age of the patient, which has already compromised their psychosocial well being (Karia et al., 2017). Missing anterior teeth leading to poor facial esthetics adds up to their psychosocial burden. Poor facial esthetic appearance for a major part of the life causes severe blow to patient's self identity and psychosocial well being.

Orthodontic treatment aimed at alignment of teeth while maintaining space for prosthesis of the missing anterior teeth becomes an integral part of patient management in such cases. The dental prosthesis is planned and placed only after the completion of orthodontic treatment. Careful planning of orthodontic treatment goals aligned with prosthetic rehabilitation may help reduce the psychological burden. During orthodontic treatment, the transient unesthetic aspect of missing anteriors can be dealt with, by giving a temporary prosthesis which will not interfere with treatment mechanics. Multiple methods are recommended to overcome this problem (John et al., 2019). One such method in routine practice is the use of riding pontics that not only helps in managing the space required for the teeth, but also prevents the unesthetic transient phase (Sharma, 2013; Mathew et al., 2015; John et al., 2019). Utilizing the riding pontics in binder syndrome cases during Orthodontic treatment may help in reducing the psychological trauma particularly in patients with Binder's Syndrome.

2. CASE

A 19 Year old male patient reported to the OPD of Department of Orthodontics and Dentofacial Orthopedics with the chief complaint of missing teeth in upper front region of jaw. Based on the clinical and radiographic features, case was diagnosed as the case of Binder syndrome (maxillonasal dysostosis) (Venkatesh et al., 2016).

Problem list (Fig 1 A, B & C): Missing Anterior teeth, Collapsed maxillary arch, Midline cleft

Treatment Objectives were: Upper arch expansion, Levelling and alignment, Alveolar Bone grafting and Lefort 2 maxillary advancement, Prosthesis with missing teeth, Retention and follow up.

Following which, the procedure was begun for preparing a temporary prosthesis.

Armamentarium

Acrylic teeth set, Bracket Kit, tooth colored acrylic, Base plate wax, carver, bracket holder, marking pencil etc.

Steps in Fabrication (Fig 2)

Patient's upper and lower well recorded impressions were made in addition silicon in putty material. Models were prepared in orthocal (Fig 2. A). Appropriate acrylic teeth set with shade matching and teeth size was selected (Fig 2. A). on the patient's model

baseplate wax was adapted in alignment to the arch (Fig 2.B). Using 19x25 ss Wire as a guide the bracket of teth 11, 21 and 22 were tied and were positioned on the respective teeth and bracket and wire were secured (Fig 2. C). the acrylic teeth surface was roughened and bracket was adhered to the teeth using tooth coloured acrylic and all the 3 teeth were stuck together to form a unit (Fig 2.D). This wire assembly along with riding pontic is transferred to patient's mouth.

A



Intraoral Pictures
Missing 12,11,21,22
With midpalatal deficiency





Figure 1 Pre treatment records. A. Intraoral Photographs B. Lateral Cephalogram C. Orthopantomogram



Figure 2 Steps in Fabrication

3. DISCUSSION

Adult patients are conscious about their smile during orthodontic treatment. Patient's satisfaction during treatment is of utmost importance to gain patient's compliance and motivate them during treatment (Sharma, 2013). During the treatment of this case, maxillary arch expansion was performed to deal with collapsed maxillary arch. This further led to increase in the anterior spacing due to missing anterior teeth. Due to this, providing a temporary prosthesis during orthodontic treatment was of planned. In the present case, patient will also be undergoing orthognathic surgery, after sufficient orthodontic corrections are done. Boosting patient's confidence amidst treatment leads to better amenability and aesthetics of the patient. The most important clinical complication of the long span unsupported orthodontic arch wire is mucosal impingement and difficulty in speech apart from poor esthetics (John et al., 2019).

The case is being followed up to continue the treatment as planned for maxillary advancement surgery and post surgical orthodontics for another 8 months. The following procedure was performed at chair side to reduce psychological trauma caused due to missing anterior teeth and is very less time consuming. It is cost effective as well. Material required for the fabrication of riding pontic is readily available in a dental clinic and with the orthodontist. With this easy design certain problems could be solved very effectively.

Aesthetics

Mucosal impingement

Speech

Figure 3 and 4 Shows the before and after images of the patient



Figure 3 Before and after treatment in frontal view



Figure 4 Before and after treatment lateral view

4. CONCLUSION

With the following problem solving in mind, the procedure mentioned in the article is warranted for use in patients undergoing orthodontic treatment and have missing or extracted anterior teeth. It is cost effective, less time consuming and gives results that boosts the patient's aesthetics, compliance and speech.

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Author Affiliation and Contributions

Dr. Shriya Prakash Murarka - Clinical work on case and manuscript writing (BDS)
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Conflict of Interest

The authors declare that there are no conflicts of interests.

Informed consent

Written & Oral informed consent was obtained from participant of the case report.

Data and materials availability

All data associated with this study are present in the paper and the Supplementary Materials.

Peer-review

External peer-review was done through double-blind method.

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