

PMS Appliance-An Innovative Appliance for Esthetic Rehabilitation in Pediatric Patient: An Unusual Case Report

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ABSTRACT: *Maintenance of arch length and width are very important in growing patients. Missing teeth may lead to loss of alveolar ridge and may interfere an innovative appliance known as PMS appliance was fabricated insitu. Functions, esthetics and cost effectiveness are the successful outcome of this appliance with minimal components used. A 13 years old girl reported to the department with missing anterior teeth was treated with the same. Appliance fabrication, advantages, limitations and various factors consideration are discussed.*

KEYWORDS: PMS appliance, esthetic, innovative, pediatric patient, case report

INTRODUCTION

Esthetics plays an important role in children and adults and anterior teeth are the most important part of the face¹.In today's time modern dentistry has been shifted to minimal invasive with esthetics and functional rehabilitation. Anterior teeth are most important for attractiveness, self-confidence and psychological effects.² In growing children many factors are to be considered before providing any prosthesis³.

Maintenance of arch dimensions in pediatric patient are pivotal. Arch dimension changes with age and maintenance of alveolar ridge till all the permanent teeth erupts helps in future placement of prosthesis. So an appliance was fabricated which can be adjusted according to transitional dentition⁴.

PMS appliance is an innovative appliance used in growing patient which is esthetic, functional and cost effective. It is simply made up of 3 components acrylic resin, pin (SS wire 20 Gauge) and 28 G needle used for Local anesthesia administration. Appliance can be fabricated easily with successful results. The fabrication process, advantages and factors to be considered are explained in this case report of a 13 years old girl.

Case Scenario

A 13-year-old girl accompanied with her father reported to the department with chief complaint of missing upper front teeth (Fig 1a). There was no significant medical history. she had trauma 6 months back where her anterior teeth got avulsed. She did not seek for treatment in past. On extraoral examination face was symmetrical. On intraoral examination there was missing upper anterior teeth 11,12,21,22 (Fig 1b,1c,1d). Since the patient was young, implants could not be placed. So an innovative appliance was fabricated with acrylic and pin and needle called PMS appliance named after respective authors (Fig 2a,2b,2c,2d).

Appliance fabrication:

The appliance was fabricated using following steps:

- (a) Alginate impression was made
- (b) Cast pouring with dental stone
- (c) Waxup was done on cast w.r.t 11,12,21,22
- (d) Finishing of blue wax pattern
- (e) Wax try-in (Fig 3a,3b)
- (f) Acrylisation of the appliance with attached Stainless Steel (20 G) wire and tube (18G) taken after breaking hub of needle (Fig 2a,2b,2c,2d) placed lingually
- (g) Finishing of appliance
- (h) Appliance placed insitu (Fig 3c,3d)

After appliance placement, patient was content with the results. Regular follow up was done (Fig 3d).

DISCUSSION

Maintaining tooth space after tooth avulsion plays an important role in future implant placement since there are various changes during transition of mixed dimension to permanent dimension⁵. Change in size and form actually occur during the growth of permanent dentition (12–18 years) in accordance with the Lundstrom et al study⁶ Early intervention to the teeth, especially at the age of

twelve when the shape of the arch has a certain stability, brings more benefits than later treatment. If any instability in the jaw are treated early, this results in a shorter course of treatment and the patient soon develops the desired teeth. Thus, this is an optimal stage for prosthetic intervention.⁷ Since the patient was 13 years old, implants could not be given because growth of ridge was not completed⁸. Removable prosthesis cannot be given since it may leads to ridge resorption and later may interfere with prosthetic rehabilitation⁹. PMS appliance is an innovative appliance fabricated and given in pediatric patient to overcome this limitations. It is a cost effective appliance since acrylic resin , SS wire (20 G) and tip of needle (18G) are used. This appliance can be expanded and adjusted according to mandibular growth thus maintaining arch dimensions.

Jannike Jantung et al have compared the esthetics perception between dentists and ordinary people, and concluded that the ordinary people and dentists' idea are different in terms of esthetics¹⁰. Limitations of this appliance are lack of strength and tendency of acrylic to discolor with time. So regular follow up is needed for arch maintenance and esthetics but in our case patient was happy with esthetics and function on regular follow up.

CONCLUSION

Esthetic plays an important role in modern era. PMS appliance is an innovative esthetic appliance which is cost effective and functional and can be effectively used in growing patient. Arch circumference and arch length can be maintained for future prosthesis placement. So, this can be used in pediatric practice for esthetic and functional rehabilitation. This appliance can be adjusted and maintained till the growth is completed.

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