



Journal Homepage: -www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI:10.21474/IJAR01/13513
DOI URL: <http://dx.doi.org/10.21474/IJAR01/13513>



RESEARCH ARTICLE

BAND AND PONTIC: A MODIFIED BAND AND LOOP SPACE MAINTAINER - CLINICAL INNOVATION

Dr. Louis Solaman Simon¹, Dr. Deepika U.¹, Dr. Shilpa Philip², Dr. Silpa Tarenia¹, Dr. Manoranjan Mahakur¹ and Dr. Krishnaveni L³

1. Senior Resident, Dept of Pediatric and Preventive Dentistry, S.C.B Dental College and Hospital Cuttack - 753007, India.
2. Post Graduate Student, Manuscript editing, Review Dept of Periodontics and Implantology, Mahatma Gandhi Postgraduate Institute of Dental Sciences, Puducherry, 605006, India.
3. Post Graduate Student, Dept of Pediatric and Preventive dentistry, S.C.B Dental College and Hospital Cuttack - 753007, India.

Manuscript Info

Manuscript History

Received: 05 August 2021

Final Accepted: 09 September 2021

Published: October 2021

Key words:-

Band And Loop, Fixed Functional, Pontic

Abstract

Primary teeth play an important role in preventing malocclusion of permanent dentition. When there is premature loss of primary teeth, the space should be maintained for preserving the arch integrity and preventing space loss. Space maintainers are the treatment of choice in such conditions. The fixed space maintainers are usually indicated to maintain the space created by unilateral/bilateral premature loss of primary teeth in either of the arches. In this clinical scenario, we have modified the band and loop space maintainer with a pontic to make it a functional space maintainer.

Copy Right, IJAR, 2021., All rights reserved.

Introduction:-

Arch integrity is an ideal requisite for harmonious occlusion of the permanent dentition. Transition of primary to secondary dentition is always a critical determinant, and timely management of malocclusion is the need of the hour. Premature loss of tooth leads to loss of arch circumference, crowding, drifting of the adjacent tooth [1], impaction of the succedaneous tooth, midline shift, and subsequent impairment of function [2]. The best way to avoid these problems is to preserve the primary teeth in the arch till their normal time of exfoliation is attained [3]. However, if premature extraction or loss of tooth is unavoidable due to extensive caries or other reasons, the safest option to maintain arch space is by placing a space maintainer. The fixed space maintainers are usually indicated to maintain the space created by unilateral/bilateral premature loss of primary teeth in either of the arches. Of the various fixed space maintainers, Band and Loop type of space maintainers are one of the most frequently used appliances [4]. Although it is easier to construct, is economical, and consumes less chair-side time, it fails to restore the occlusal function of the lost tooth.

Modifying Band and Loop by incorporating a pontic makes it a functional space maintainer along with all its inherent advantages. Hence, an attempt is made to modify the appliance so as to make it a fixed functional space maintainer.

Corresponding Author:- Dr. Louis Solaman Simon

Address:- Senior Resident, Dept of Pediatric and Preventive Dentistry, S.C.B Dental College and Hospital Cuttack - 753007, India.

Case Report

An 8-year old female patient reported to the Department of Pediatric and Preventive Dentistry, S.C.B Dental College and Hospital, Cuttack with a chief complaint of pain in the lower right back tooth region since 3 months. The mandibular right deciduous second molar was carious with accompanied resorption of more than 2/3rd of its roots and hence need to be extracted. On clinical examination, fair oral hygiene, decayed 54 55 74, developing crossbite in anteriors. Model analysis was performed followed by the placement of a fixed functional band and loop space maintainer (Figure 1) along with 2*4 appliance for correction of anterior crossbite.

Figures:

Figure 1:- Pre-operative mandibular occlusal view edentulous 85.



Figure 2:- Modified band and loop space maintainer.



Figure 3:- Appliance in situ.

Technique of Fabrication of the Functional Band and Loop Space Maintainer

The first step is to construct a conventional band and loop space maintainer in the region of 85. This is followed by the placement of custom made pontic which makes it functional as well as acts as a posterior bite plane in the edentulous area of the cast. The occlusion is then checked with the cast of the opposing arch and adjusted such that 2-3 mm clearance will be provided in the anterior region. The completed appliance is then finished and polished (Figure 2). Trial fit is done in the patient's mouth, and the appliance is checked for the presence of soft tissue irritation and adjusted accordingly. The final cementation of the appliance is done (Figure 3).

Discussion:-

The fixed space maintainers are usually indicated to maintain the space created by unilateral/bilateral premature loss of primary teeth in either of the arches. Of the various fixed space maintainers Band and Loop type of space maintainers are one of the most frequently used appliances [4]. However, the disadvantage is that it is not functional. Apart from maintaining the mesiodistal dimension of the space created by premature loss of a tooth, a space maintainer should aid in mastication and prevent supraeruption of the opposing tooth or teeth. It should also be simple, not interfere with normal occlusal adjustments, or restrict normal growth and development [7].

This appliance has advantages such as prevents supraeruption of the opposing tooth and development of abnormal tongue habits and also aids in masticatory function. Limitations with in appliance are direct visualization of the eruption of the successor is not possible and cement loss and solder failure can be possible. These limitations can be overcome by long-term and frequent follow-up; parents should be informed that the pontic alone will be removed from the appliance when the child approaches the eruption age of the successor.

Conclusion:-

Maintaining space and function simultaneously along with addressing other developing malocclusion such as crossbite in early loss of the primary teeth are challenging tasks. The functional band and loop space maintainer described in this report will be a good choice for use in premature loss of a single tooth with developing anterior crossbite in very young children.

References:-

1. Baroni C, Franchini A, Rimondini L. Survival of different types of space maintainers. *Pediatr Dent* 1994; 16:360- 1
2. Savitri R, Anandakrishna L, Kamath PS, Ramya M. Mayne's appliance- guidance of eruption: A case report. *Int J Med Dent Case Rep* 2014. p.1- 3. doi: 10.15713/ins.ijmdcr.17.
3. Kirzioglu Z, Ozay MS Z, Ozay MS. Success of reinforced fibre material space maintainers. *J Dent Child*. 2004;71; 2:158-62.
4. Wright CZ and Kennedy DB: Space control in the primary and mixed dentitions. *Dent Clin North Am*. 1978; 22:579-601.
5. Moyers, RE. *Ortodontia*. 4th ed. Brazil: Rio de Janeiro: Guanabara Koogan; 1991.
6. Andrade ADS, Gameiro GH, DeRossi M, Gavião MBD. Posterior crossbite and functional changes: a systematic review. *Angl Orthod* 2009 Mar;79(2):380-386.
7. Pinkham JR, Casamassimo PS, Fields HW, McTigue DJ, and Nowak AJ. "Space maintenance in the primary dentition," in *Pediatric Dentistry: Infancy Through Adolescence*. Elsevier Saunders, Missouri, 2005. Eds., pp. 419-48.
8. Tsai HH. Components of anterior crossbite in the primary dentition. *J Dent Child* 2001 Jan-Feb;68(1):27-32.