



**ORIGINAL RESEARCH PAPER**

**Dental Science**

**BAND AND LOOP SPACE MAINTAINER: A CASE REPORT**

**KEY WORDS:**

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**ABSTRACT**

A habit can interfere with the growth and normal development of the jaws, favoring the onset of malocclusion and changes in normal swallowing and speech patterns depending on factors such as duration, frequency, intensity, and facial pattern. Primary teeth plays a critical role in the growth, development, esthetics and to encourage normal function and allows the permanent teeth to erupt into proper alignment and occlusion , Band and loop is a very commonly used fixed type of space maintainer for premature loss of a tooth in very young children. This space maintainer is known for its versatility. It can be used for either of the arches in both unilateral and bilateral cases.

**INTRODUCTION**

According to **Boucher** it is fixed or removable appliance designed to preserve the space created by the premature loss of a primary tooth or group of teeth<sup>1,2</sup>. The AAPD 2015 guidelines state that the objectives of space management is to prevent the loss of arch length, width and arch perimeter by maintaining the relative position of the existing dentition<sup>3</sup>. Primary teeth plays a critical role in the growth, development, esthetics and to encourage normal function and allows the permanent teeth to erupt into proper alignment and occlusion<sup>4</sup>. Diverse dietary patterns make children more susceptible to dental caries and result in premature loss of primary teeth, thereby necessitating placement of space maintainers<sup>5</sup>. The most commonly used fixed space maintainer is the band and loop and it is easy to construct, economical, and consumes less chair-side time.

**CASE REPORT:**

A 8 year old Female patient reported in the Department of Pedodontics & Preventive Dentistry K.D.C Meerut, Uttar Pradesh, India, with a chief complaint of pain in lower right back tooth region for the past 1 week. On intraoral examination, grossly decayed 85 and occulsal caries in 75, 84 were observed. After detailed explanation of procedure, patient was advised band and loop and restoration in 75, 84 and written consent was obtained from the patient.

**RADIOGRAPHIC INVESTIGATION:**

On radiographic examination; IOPA radiograph revealed grossly decayed 85 and beneath of it there is a tooth-like structure indicates the presence 45 at 6th Nolla's stage as shown in radiograph.

**TREATMENT PLAN :**

Considering the chief complaint and diagnosis, a treatment plan was decided following which upper and lower alginate impression were made for study model.

- GIC Restoration in 75, 84.
- Extraction of 85 Followed by Band & Loop space Maintainer.
- Follow up 3 monthly.

**FABRICATION OF BAND & LOOP SPACE MAINTAINER**

**Armamentarium:** Band material (for permanent molar- 0.006 X 0.180 X 2 inches), Pliers – Band forming pliers, Contouring plier, Band seater or pusher, Band Adapter, Hoe plier (straight and curved), Pack plier, Crimping plier, universal plier, Band Removal plier, Band Cutting Scissor, Stainless steel wires (round), Spot welding unit, soldering unit, silver solder, flux, Wire cutter, Finishing burs and Polishing stones.

**BAND CONSTRUCTION:** The making of a properly, contoured, strong band is a very important undertaking for fixed appliances or space maintainer.

**DIRECT BAND TECHNIQUE:**

- Band is fitted around the tooth posterior to the edentulous space and Seam at Mesiobuccal line angle.
- After band adaptation an alginate Impression was made and band removal plier was used to remove the band and place into the impression in a same position. Stabilize the correct position using wax or a piece of wire and pour the cast.

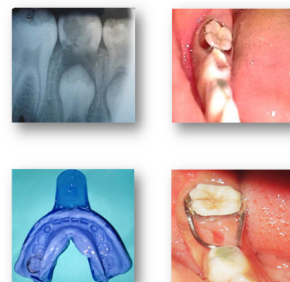
**LOOP FABRICATION AND SOLDERING**

- Loop (0.036 SSwire) should rest against the adjacent tooth at the contact area and should be 1mm of the gingival tissue.
- The dimension of the loop should be 8mm that allows the permanent tooth to erupt freely and the distal end of the loop should lie in the middle of band on both sides.
- Plaster is used to position the adapted wire on the working model.
- Flux should be applied above and below the point where wire contacts bands.
- A piece of solder is transferred to solder joint.
- Immediately dip in water and remove appliance. A Green stone is used to contour the solder joint to a smooth transition with the band.

**FINISHING, POLISHING AND INSERATION**

- Rubber wheel are relied upon to reduce the surface roughness and gold rouge or rag wheel is use for final polishing.

**Preoperative Band adapted**



**Alginate Impression with band**  
**Post-Operative: Cementation done**

**DISCUSSION:**

Oral habits have been the subject of intense discussion and

study by dental profession for several years. A habit can interfere with the growth and normal development of the jaws, favoring the onset of malocclusion and changes in normal swallowing and speech patterns depending on factors such as duration, frequency, intensity, and facial pattern. It is essential to consider the type of material to be chosen that is inexpensive and should be able to serve the purpose until the eruption of the permanent teeth without causing interference to the normal eruption process. One such type of space maintainer is Band and Loop space maintainer<sup>1,6</sup>. Premature loss of teeth in children leads to space loss and affects arch integrity. The band and loop space maintainer is used in majority of patients requiring single tooth space maintenance in both primary and mixed dentitions. It preserves the proximal dimensions, but it is non-functional appliance<sup>3,4</sup>. Band and loop is a versatile appliance as it is easy to construct, economical, and consumes less chair-side time. It has shown good success rates. However, it is not a functional appliance<sup>7</sup>. This appliance design did not interfere with oral hygiene maintenance nor did it causes soft tissue irritation<sup>1,8</sup>, discomfort, or food lodgement. There were no reports of fracture of the appliance<sup>9</sup>. However, it should be noted that the maximum follow-up period was only one year, hence long-term follow-up is essential to evaluate the longevity of the appliance.

**CONCLUSION:**

Balancing the primary requirements of the patient's oral status a Pediatric dentist should choose space maintainers on the particular clinical situation. Band and loop is a very commonly used fixed type of space maintainer for premature loss of a tooth in very young children. This space maintainer is known for its versatility. It can be used for either of the arches in both unilateral and bilateral cases.

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