Band and loop space maintainer – Made Easy

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ABSTRACT

Space maintainers have been used in Pediatric Dentistry for many years. The use of these appliances, however, in terms of indications, contraindications, design and construction has gained little attention from researchers. This paper highlights the construction of a new technique of fabrication of band and loop space maintainer. The advantages of this new Direct technique or Single sitting technique over the conventional technique are discussed.

Key words
Band and loop space maintainer, Direct technique or Single sitting technique.

INTRODUCTION

The most important function of space maintainers is to maintain the mesio-distal relationship in a given arch. The premature loss of primary teeth may reduce the arch length required for the alignment of underlying permanent teeth, hence predisposing to crowding, rotation and impaction of the permanent teeth. An appropriate use of space maintainer is advocated to hold the space until the eruption of the permanent teeth.

About 51% of the prematurely lost first primary molars and 70% of prematurely lost second primary molars result in a loss of space and a consequent malposition of a permanent tooth in that quadrant.

Children with loss of primary molars before 71/2 years of age developed more crowding than children with no loss. If the loss of teeth occurs after 71/2 years, impact on the relative space is minimal.

The band and loop space maintainer is indicated for the premature loss of single, unilateral or bilateral maxillary or mandibular primary molars. Band and loop space maintainer adjusts easily to accommodate changing dentition. However, it does not aid in mastication and will not prevent the continued eruption of the opposing teeth.

The conventional technique of band and loop space maintainer fabrication has the following limitations.

1. It requires a minimum of two appointments.
2. Impression making is required which may be difficult in a young or an uncooperative child or those with severe gag reflex.
3. It requires more laboratory time.
4. It is a technique sensitive procedure, as band displacement during pouring of the cast is common.

Considering the above limitations, a new technique called the “Direct technique or Single sitting technique” has been devised, which is discussed below.

DIRECT TECHNIQUE OR SINGLE SITTING TECHNIQUE

STEPS IN FABRICATION

1) The band is pinched. (Fig. 1)
2) The prefabricated loop is selected. Loops are made priorly in order to reduce chair side and laboratory time. (Fig. 2)
3) The loop is then tried in position intraorally and minor adjustments are carried out.
4) A horizontal mark is made on the band using a marking pencil at the site where the loop contacts the band. Vertical markings are made both on the loop and the band at the anterior most point of contact of the loop with the band. These markings are done both buccally and lingually. (Fig. 3)
5) The band is then removed from the tooth. Using the above mentioned markings as reference points, the loop is placed in position on the band and spot welded. (Fig. 4)
6) The band and loop is then tried intraorally to confirm its accurate position. (Fig. 5)
7) It is taken out of the mouth, excess wire trimmed and again spot welded for better stability. (Fig. 6)
8) It is then invested and soldered as usual. (Fig. 7)
9) The appliance is trimmed and polished.
10) It is cemented using luting cement. (Fig. 8)

DISCUSSION

The premature loss of teeth is an unfortunate occurrence. Each situation needs to be assessed thoroughly to provide...
Fig. 1: Band Adaptation.

Fig. 2: Prefabricated Loops.

Fig. 3: Marking on the Band and Loop.

Fig. 4: Spot welding of Loop on the Band.

Fig. 5: Try-in to check for fit.

Fig. 6: Second spot welding done for stability.

Fig. 7: Invested and soldered Band and loop.

Fig. 8: Polished and cemented.
the best treatment. The knowledge of using the appropriate appliance at the right time is an important aspect of space maintenance treatment planning.

This Direct technique or Single sitting technique can be aptly said to be 'Space maintenance in its simplest form' as it offers the following advantages.

1. Single sitting procedure
   - The entire procedure can be completed in a single appointment.

2. No impression making
   - As the impression making and cast preparation are avoided, there are no chances of error related to them such as band dislodgement on the cast.

3. Lesser chair side time
   - This is again related to the avoidance of impression making, which may be difficult and time consuming in young children.

4. Lesser laboratory time
   - The time required for the transferring and positioning of band on the impression made, the pouring of cast, the waiting period for its setting, and the removal and trimming of cast is saved.
   - The selection of prefabricated loops which are made prior to the patient's appointments can further reduce the laboratory working time.

5. Better Accuracy
   - The technique is accurate as markings are made intra orally, and repeatedly confirmed for their correct position, unlike the conventional technique which has errors related to impression making and band dislodgement on the cast.

6. Easy fabrication
   - This method can be easily mastered, as it is less technique sensitive.
   - We have utilized this technique in a many as 50 cases and found it to be successful without any technical errors.
   - The average time taken for the entire procedure from band pinching to cementation of the space maintainer is approximately 20 minutes, which is acceptable by patients and also by dentists. The patient's acceptance was more as the procedure was single sitting without any impression making.
   - This technique can be adopted by the dental practitioners as a routine chair side technique as it offers more advantages over the conventional technique.

REFERENCES


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