

# SPACE MANAGEMENT AND RESTORING ESTHETICS IN PRIMARY DENTITION: A CASE REPORT

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## Abstract

Primary tooth loss frequently encounters in children's due to grossly carious teeth which results in arch length discrepancy, speech difficulty, malocclusion, poor masticatory function and space loss over a period of time. Space management is required to overcome the future consequences of loss of primary teeth by fixed space maintainers. In addition, the anterior primary teeth also play a vital role in terms of aesthetics and phonetics. Hence, presenting a case of 6 year old child where space was managed with bilateral band and loop and nance palatal arch space maintainers in lower and upper arch and restoring esthetics in pulpally compromised teeth.

**Key words:** *Space maintainer, Esthetic restoration*

## Introduction

Worldwide, dental caries is prevalent in children characterized by causing pain, discomfort and functional limitations. Early childhood caries (ECC) is one of the most virulent form of dental caries which usually occurs in children less than 71 months of age. Initially, it presents in smooth surface affecting the primary maxillary incisors. As the disease progresses, decay spreading to other teeth including primary molar which cause destruction of primary dentition.<sup>1</sup> In childhood, untreated carious lesion is the alarming condition for teeth loss and compromised esthetics which not only affects a child's permanent dentition but also have an considerable impact on physiological and psychological nature, ultimately leads to space loss. Thus, space management after loss of primary dentition is one of the central concern by the provision of a space maintainer appliance.<sup>2</sup> It also offers proper alignment to the eruption of permanent successor. In a child patient, various appliances have been designed to maintain space depending on the jaw involved, stages of tooth development, and missing deciduous teeth.

In addition, maintaining esthetics with the use of an intracanal post after endodontic treatment is a different aspect in case of severely damaged crown structure.<sup>3</sup>

This report highlights a case of space management with the use of bilateral band and loop and nance palatal arch space maintainer and aesthetic rehabilitation.

## Case

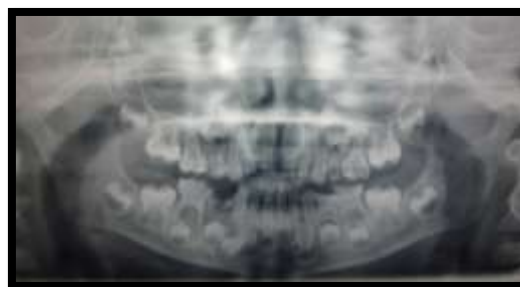
A six year female child came to the Department of Pedodontics with the chief complaint of several carious teeth and pain was present in the lower right and left back teeth region since 5 days. In order to relieve the spontaneous nature of pain, medication was prescribed by the local dentist.

On diagnosis, clinical and radiographic examination revealed multiple decayed teeth with pulp exposure i.r.t 51, 52, 55, 61, 62, 74, 75 and 85.

Fenestration was observed i.r.t 74. The coronal portion was grossly decayed i.r.t 54, 64 and 84. Thus, a diagnosis of severe early childhood caries was made. (Figure 1 and 2)



**Figure 1:** Pre-operative intraoral view



**Figure 2:** Pre-operative orthopantomogram

Patient parent's was explained about the type, time and cost of entire treatment and consent was obtained. In the emergency phase, extraction was performed i.r.t 74 and 84 after administration of local anaesthesia.



**Figure 3:** Nance palatal arch space maintainer



**Figure 4:** Bilateral space maintainer



**Figure 5:** Post-operative view

Corrective procedures performed are as follows:

- Single visit pulpectomy i.r.t 51, 52, 61, 62, and 65 was carried out followed by metaphax obturation.
- Custom made biological post i.r.t 51, 61 and omega post i.r.t 52,62 was placed with glass ionomer cement after removing obturating material till 3 mm. then after etching and bonding, strip crown was given to build up a pleasant smile.

- Full coverage restoration i.r.t 64 was given.
- Lesion sterilization and tissue repair therapy was performed i.r.t 75, 85 followed by cementation of stainless steel crown using luting glass ionomer cement.
- Conventional bilateral band and loop space maintainer was fabricated after banding of 74, 84 and cemented with luting glass ionomer cement.
- Intital carious lesion of 55 was restored with restorative glass ionomer cement.
- Extraction of 54 and 64 was done after administrating local anaesthesia.
- Construction of Nance palatal arch with 19 gauge wire was constructed on the dental cast and acrylic button was then inserted into the anterior palatal surface for better retention and cementated into the patient's mouth with luting glass ionomer cement i.r.t 55 and 65.

Postoperative Instructions were given to maintain oral hygiene and follow up was scheduled after every three months. At recalled visit, treatment outcome was found to be excellent and no further new lesion was noticed.

## Discussion

The most challenging task for a paediatric dentist is to reduce the pain, restoration of masticatory and speech efficiency, preservation of space and restoring aesthetics. Thus, some factors such as post caries removal surface area, different restorative material, treatment expenditure and child cooperation plays an important role to attain a good esthetics.<sup>4</sup> In this case, strip crowns using composite restorative material after endodontic treatment appeared to be pleasant for patient and her parents. Thus, to provide strength in such teeth, use of intra-canal retainers (biological and omega post) was used. Subsequently, space was preserved after extraction to avoid any destruction in permanent teeth arrangement includes crowding, opposing teeth supra-eruption, and impaction.<sup>5</sup> Albati et al revealed some of the advantages of space maintainers which includes that it should be easily constructed, adequate strength to withstand the shearing and functional forces, and allow proper oral hygiene. Also, they do not interfere with jaw and tooth development, pattern of eruption, masticatory function and not require any kind of tooth preparation.<sup>6</sup> Also, in case of multiple extractions.<sup>7</sup> Hence, bilateral band and loop and nance palatal arch space maintainers were used.

## Conclusion

Space maintainer proves to be a valuable treatment to preserve arch integrity for future permanent teeth and also aesthetic maintenance shows a significant effect to re-establish positive attitude toward dental treatment.

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