A SIMPLE AND QUICK TECHNIQUE OF FABRICATING A SPACE MAINTAINER FOR AVULSED PRIMARY MAXILLARY INCISORS

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ABSTRACT

Traumatic injuries to primary teeth are very common. A properly designed fixed space maintainer not only preserves arch length but also reduces the psychological trauma, speech problems and prevents the development of tongue thrusting habits. As, it is difficult while operating in such young patient’s mouth, this article describes a simple technique to quickly fabricate a space maintainer for avulsed primary maxillary incisors.

Key words: Space maintainer, tooth avulsion

INTRODUCTION

Traumatic injuries to primary teeth are very common, especially in children aged less than four years.1 The primary maxillary anterior teeth are more susceptible for injuries, with avulsion being around 9-12% in a Danish population.2 Permanent maxillary incisors erupt at 6.5 to 7.5 years, and thus, the early loss of primary anterior teeth may lead to a number of consequences such as space loss3, delayed eruption and misaligned permanent teeth1, problems in speech4, low self-esteem4,5 and the development of tongue thrusting habits.6

A space maintainer serves the purpose of preserving the arch length as well as addresses the problems associated with the loss of teeth stated above. Space maintainers can be either fixed or removable. Removable space maintainer disadvantages, such as requiring cooperation and the possibility of being lost or fractured by the patient, has led to a preference for fixed space maintainers.7 Fixed appliances, on the other hand, if properly designed, are less damaging to the oral tissues and less of an annoyance to the paediatric patient thereby ensuring compliance and longevity of wear.8,9

The literature reports many different types of appliances that can be used as fixed space maintainers including Band and loop appliance, crown and loop appliance, distal shoe appliance, Transpalatal arch, Nance palatal arch appliance, Lingual arch and Fixed wire composite space maintainers.7,10 In this paper, a simple and quick technique to fabricate a space maintainer for lost primary maxillary incisors is described.

Technique

1 Make impressions in reversible hydrocolloid.
2 Pour models in dental stone. (see figure 1)
3 Fabricate a framework using stainless steel wire of 0.7 gauge. A space of 0.25mm is kept between the retainers and the abutment teeth to allow space for composite. (see Figure 2 & 3)
4 Trim two acrylic maxillary lateral incisors to the desired size.
5 Attach the teeth in the proper positions to the metal framework, maintaining esthetics and functional requirements using self-cure acrylic resin. (see figure 4)
6 Dry and isolate the abutment teeth.
7 Etch the abutment teeth.
8 Apply the bonding agent for composite resin as per instructions of the manufacturer.
9 Apply thin layer of composite and position the fabricated appliance in the mouth. Remove the extra material.

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10 Light cure the composite.
11 Remove any extra flashes of composite using an explorer.
12 Check for any high spots and remove all contacts of the appliance with the opposing natural teeth.

DISCUSSION

Fixed space maintainers are indicated in the anterior region mainly for aesthetic reasons. Use of a modified form of a Nance palatal arch appliance has been documented in the literature for this purpose. But it requires a lengthy procedure and a lot of cooperation from the patient. This technique provides a simpler and less time-consuming procedure to fabricate an aesthetic appliance also used to maintain space. It also has the advantage that it can be used in cases where molar bands are contraindicated. There is a possibility that the retainers might be visible in patients having a gummy smile, being the cause of refusal to use such an appliance. The appliance can be easily removed without any harm to the remaining teeth.

SUMMARY

Working in the mouth of a Paediatric patient requires high level of skill and time. This technique provides a simple and time-saving method...
to make an aesthetic space maintainer in the ante-
rior maxilla. Denture teeth are attached to a metal
framework made in stainless steel wire com-
monly available in the clinic, utilizing self cure acrylic
resin. The appliance is then bonded in situ using
composite.

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