Chairside Space Maintainers
One Appointment - No Impressions, No Models, No Lab Fee

Fabricating a space maintainer when primary molars are lost prematurely is one of the most important services a dentist can provide for a pediatric patient.

Very early loss of a primary molar requires a space maintainer if the adult first premolar will not be erupting in the following six months. If the adult first molars have not yet grown into proper occlusion, early loss of a primary molar does not require a space maintainer.

Early loss of a second primary molar requires a space maintainer if the adult second premolar will not be erupting in the following six months.

A good rule of thumb to use is that it will take about six months for a premolar to erupt if it is still covered by one millimeter of bone, as measured on a bite-wing x-ray. Another good predictor of eruption is root development of the premolar: when root formation is 60-70% completed, the premolar is ready to erupt.

An especially important warning sign that indicates it is imperative to fabricate a lower space maintainer when early loss of a second primary molar occurs, is the position of the adult second molar: if the erupting twelve-year molar is mesially angulated, it is a clear threat that the first molar might be forced forward and tipped into the space needed for the unerupted second premolar.

Because loss of arch length can cause serious orthodontic complications, it is best to be more aggressive rather than conservative when it comes to assessing the need for a space maintainer.

**Types of Space Maintainers**

Depending on the particular situation and on the dentist’s preferences, space maintainers may be: band and loop, crown and loop, lower lingual holding arch, distal shoe, Nance, or a removable appliance. The most common of these appliances is a fixed band and loop.

To provide a patient with a band and loop space maintainer, a dentist can take an impression of the patient, and, at a second appointment, insert the laboratory fabricated appliance.

A laboratory space maintainer works very well, but has several disadvantages:

- It requires a second appointment.
- It increases the overhead cost to the dentist.
- It is sometimes challenging to obtain a good impression, either because the child is difficult, or because there is a great deal of gingival tissue still remaining on the distal wall of the tooth that requires a band.

By contrast, chairside space maintainers are very simple to fabricate, cost-effective, one-visit procedures that are generally uncomplicated, and trouble-free.

**Technique and Case Report**

The following case illustrates the technique for easily fabricating a chairside space maintainer.

An eight year old boy presented with an infected lower right second primary molar. The tooth was painful and mobile with muco-gingival swelling and pus, and a radiograph showed an apical radiolucency (Figure 1).

Next, a wire loop is selected to act as the fixed band and loop. Narrow width spacers are used for larger bands (Figure 4).

These wire loops come in three different styles. While it is not too critical which loop is chosen, generally, the loop with the added rest is used when extra stability is required, the drop loop is used when there is a path of insertion concern, and the standard loop is used in typical cases (Figure 5).
Step 3 -
Holding the selected band in one hand, the wires are slid, like a trombone (Figures 6 and 7), into the tubes, and the assembly tried into the mouth.

Step 4 -
Tube crimping pliers are used to firmly crimp the tube over the inserted wire. After several crimps, the wire is firmly fixed in place (Figure 12).

Step 5 -
The completed space maintainer, preferably out of occlusion, is cemented in place. A good choice of cement would be a highly filled, resin-modified glass ionomer, such as GC Ortho-Cem (Figure 13).

Supplies:
- A selection of sizes of bands with tubes.
- Wire loop spacers, either standard, drop-loop, or with rests.
- Wire cutters.
- Tube crimping pliers.
- Separating disks.
- Resin-modified glass ionomer cement.

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Southwest 800-423-3270
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References: