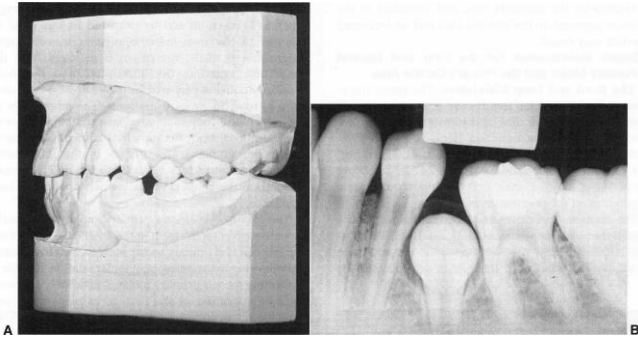


Premature loss of second primary molar

- Have less effect on the teeth in the anterior segment than the loss of a first primary molar.
- However, an irregularity may develop in the permanent molar relationship.
- Early loss of the second primary molar is invariably followed by mesial drifting of the first permanent molar
- And possible impaction of the second premolar
- Also a maxillary molar often will rotate mesial in.



The space-maintaining appliances that are generally advocated are

- ❖ ***The band and loop*** with the band placed on the first permanent molar. If the first primary molar is the abutment tooth, it may be lost before the time when the space-maintaining appliance can be discarded.
- ❖ ***The passive lingual arch.***

The soldered lingual arch may be the space maintainer of choice after the multiple loss of primary teeth in the mandibular arch



Also, the upper lingual arch (Nance appliance) arch



is the appliance of choice when bilateral space loss is present or when leeway space must be preserved.

Disadvantage:

- ❖ it does not restore function.

Advantages:

- ✓ The use of the lingual arch essentially eliminates the problem of patient cooperation.
- ✓ With properly fitted bands and a well-made appliance, there should be no problems with breakage or retention and no concern about whether the child is wearing it.

Technique:

1. a stainless steel band must fitted on tooth
2. Impression of dentition and band, the band is removed from the tooth and seated in the impression
3. On the working model a 0.036- or 0.040-inch steel wire is contoured to the arch, extending forward to make contact with the cingulum area of the incisors
4. In contouring the arch wire, one should allow for the path of eruption of the premolar and canines so that the arch wire will not interfere.
5. Where possible, an ideal anterior arch form should be constructed so that the incisors have an opportunity for alignment.
6. The arch wire should be extended posteriorly along the middle third of the lingual surface of the molar band and soldered firmly, but passively, in this position.
7. A 'U' shaped arch wire extends from the lingual surface of the molar bands to the lingual surface of the anterior teeth. They are placed above the cingulum of the lower incisors. It prevents the mesial movement of the posterior teeth and collapse of the anterior segment.

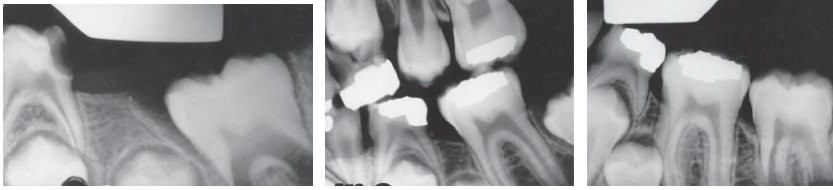
A transpalatal arch

indicated when one side of the arch is intact and several primary teeth are missing on the other side. In this case, the rigid attachment to the intact side usually provides enough stability for space maintenance. However, when primary molars have been lost bilaterally, both permanent molars may tip mesially with a transpalatal arch. A conventional lingual arch or Nance appliance is preferred in this situation



Loss of the Second Primary Molar Before Eruption of the First Permanent Molar

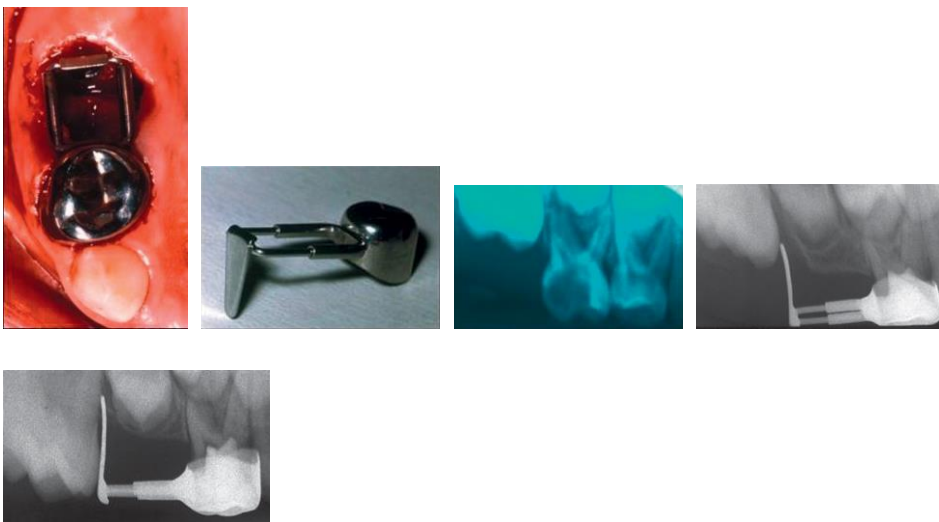
Mesial movement and migration of the first permanent molar often occurs before eruption in instances of premature loss of the second primary molar.



The Distal Shoe Appliance.

A crown and band appliance with a distal intralingival extension used to maintain space or, in some instances, to influence the active eruption of the first permanent molar in a distal direction.

- ✓ Using the first primary molar as the abutment, stainless steel Crown or a well-adapted band on a noncrowned tooth may be satisfactory.
- ✓ If the second primary molar has not yet been removed, it is cut off the model. A hole that simulates the position of the distal root of the tooth is made in the model using a bur .
- ✓ If the second primary molar has been removed previously, the positioning of the tissue extension may be determined with dividers and a bite-wing radiograph
- ✓ Before final placement of the maintainer in the mouth, a radiograph of the appliance should be made to determine whether the tissue extension is in proper relationship with the unerupted first permanent molar.
- ✓ It is not necessary for the distal extension to be in direct contact with the permanent molar unless the tooth has already moved mesially.
- ✓ The depth of the intralingival extension should be about 1.0 to 1.5 mm below the mesial marginal ridge of the molar
- ✓ After the molar has erupted, the intralingival extension is removed.
- ✓ If the appliance is to be used as a reverse band and loop space maintainer, it may be necessary to add a supragingival extension to prevent the molar from tipping over the wire.

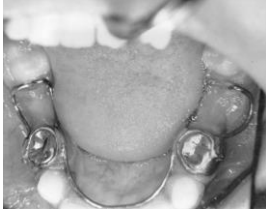


Contraindications:

1. If several teeth are missing, abutments to support a cemented appliance may be absent.
2. Poor oral hygiene
3. lack of patient and parental cooperation.
4. Certain medical conditions, such as blood dyscrasias, immunosuppression, congenital heart disease because it is associated with a chronic inflammatory response.

In cases in which use of the distal shoe is contraindicated, two possibilities for treatment exist:

- (1) allow the tooth to erupt and regain space later or
- (2.) use a removable or fixed appliance that does not penetrate the tissue but places pressure on the ridge mesial to the unerupted permanent molar



Areas of Multiple Primary Molar Loss

1- **Removable acrylic partial dentures** have been used successfully in either arch after the loss of multiple teeth.

2- **The passive lingual arch or (Nance appliance)**

3- **transpalatal arch.**

4- It is occasionally necessary to recommend extraction of all the primary teeth in a preschool child and wear complete dentures before the eruption of permanent teeth.



Loss of First Permanent Molars

The first permanent molar is unquestionably the most important unit of mastication and is essential in the development of a functionally desirable occlusion. A caries lesion may develop rapidly in the first permanent molar and occasionally progress from an incipient lesion to a pulp exposure in a 6-month period. The loss of a first permanent molar in a child can lead to changes in the dental arches that can be traced throughout the child's life. Unless appropriate corrective measures are instituted, these changes include

1. diminished local function,
 2. drifting of teeth,
 3. and continued eruption of opposing teeth.
- ❖ The second molars, even if unerupted, start to drift mesially after the loss of the first permanent molar.
 - ❖ A greater degree of forward bodily movement will occur with loss of the first permanent molar in 8- to 12-year-old children.

- ❖ In older children, if the loss occurs after eruption of the second permanent molar, more exaggerated mesial tipping of the second molar can be the expected outcome.
- ❖ Although the premolars undergo the greatest amount of distal drifting, all the teeth anterior to the space, including the central and lateral incisors on the side where the loss occurred, may show evidence of movement.
- ❖ Contacts open and the premolars, in particular, rotate as they fall distally. There is a tendency for the maxillary premolars to move distally in unison, whereas those in the lower arch may move separately.
- ❖ When the maxillary first permanent molar loses its opponent, it erupts at a faster rate than the adjacent teeth. The alveolar process is also carried along with the molars and causes problems when prosthetic replacements are needed.

The treatment of patients with the loss of first permanent molars must be approached on an individual basis.

- ✓ If the first permanent molars are removed several years before eruption of the second permanent molars, there is an excellent chance that the second molars will erupt in an acceptable position. However, the axial inclination of the second molars, particularly in the lower arch, may be greater than normal. The decision whether to allow the second molar to drift mesially or to guide it forward in an upright position may be influenced by the presence of a third molar of normal size.
- ✓ When the first permanent molar is lost after the eruption of the second permanent molar, orthodontic evaluation is indicated, and the following points should be considered: Is the child in need of corrective treatment other than in the first permanent molar area? Should the space be maintained for a replacement prosthesis? Should the second molar be moved forward into the area formerly occupied by the first molar? The latter choice is often the more satisfactory, even though there will be a difference in the number of molars in the opposing arch. A third molar can often be removed to compensate for the difference. Without treatment, the second molar will tip forward within a matter of weeks
- ✓ Another option to consider is autotransplantation of a third molar into the first molar position