

Clinical tips for stress-free 2x4 Treatment

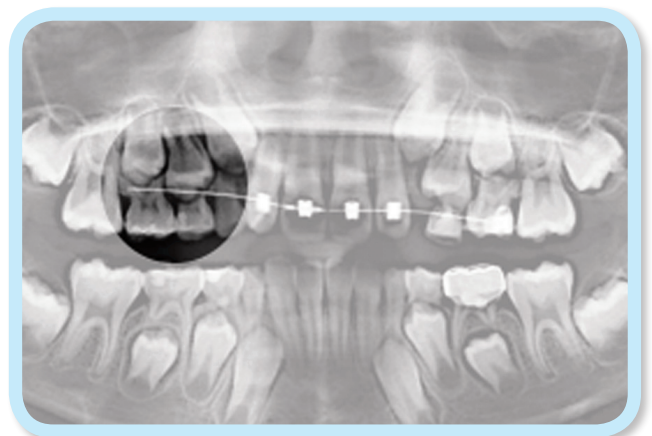
Early orthodontic treatment is commonly requested in pediatric dentistry (*pedodontic*) practices. A conventional 2x4 fixed appliance (*two molars and four incisors*) is one of the most frequently selected treatment options for correcting anterior crossbites and esthetic problems in the mixed dentition stage. Although the 2x4 appliance is very effective for minor crowding and arch length issues, patients often complain about soft tissue irritation. There are frequent emergency appointments because wires are displaced. This article shares two clinical tips to address these common problems.

First, soft tissue irritation of the buccal mucosa can be reduced by moving the molar tube mesially on the first molar or bonding it on the primary second molar (*Fig. 1*). Moving the tube forward decreases the length of the unsupported buccal segments of the archwire, resulting in less irritation and dislodgment of the archwire, particularly when the patient chews a large bolus of relatively rigid food. This is a common problem, particularly for highly flexible archwires like .014" CuNiTi (*Fig. 2*).



■ **Fig. 1:**

Moving the distal tube or bracket forward to the primary second molar helps control irritation of the buccal mucosa and decreases the length of the unsupported wire in the buccal segments.



■ **Fig. 2:**

A panoramic radiograph shows that a flexible archwire in the buccal segment (highlighted circle) is easy to dislodge from a tube on the first molar.

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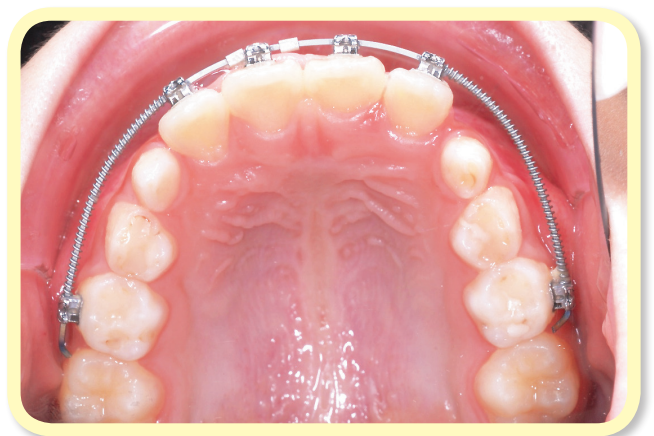
Second, wire loosening can be a problem, when the upper arch is expanded. As the maxilla is widened, the archwire length is insufficient to remain engaged in the molar tubes. One of the solutions is to replace the tubes on the molars with regular brackets on the second primary molars (Fig. 3). This arrangement allows the practitioner to extend the wire beyond the bracket bilaterally and apply heat treating and bending to the ends of the wire, to resist dislodgment even when the main archwire is .014x.025" CuNiTi (Fig. 4).

These two tips help reduce patient discomfort, decrease emergency visits to correct loose (*disengaged*) wires, and prevent bracket swallowing incidents. By eliminating the common problems described, early orthodontic treatment can be stress-free.



■ **Fig. 3:**

Substituting a bracket on the second primary molar for the first molar tube decreases the length of the unsupported buccal segment. Increased archwire length distal to the bracket helps reduce dislodgment of the .014x.025" CuNiTi archwire.



■ **Fig. 4:**

Heat treating and bending the ends of the archwire distal to the second primary molar brackets help prevent wire dislodgment, and also decrease the probability that the molar bracket will be swallowed if it comes loose.