

Correcting Posterior Crossbites with the Occlus-o-Guide Appliance

Premolar crossbites - Premolar crossbites correct easily with the Occlus-o-Guide® appliances due to the forceful movement created by the buccal and lingual flanges that capture the displaced tooth and move it to its proper position in the arch. The first permanent molars lock the appliance in place with both buccal and lingual flanges held in their proper positions which then allows the flange most affected by the displaced tooth to place a significant force in the direction of movement required to bring it back into alignment. Two requirements are necessary however for this to take place. The first is that there must be adequate space in the arch for the displaced tooth; and the second is the patient must exert occlusal force with clenching for at least two hours per day. In order to create proper space, a deciduous molar might be stripped or, if there is space present several teeth away from the tooth in crossbite, this is usually sufficient without further adjustment to the appliance. If there is not enough space and there are contacts between all other teeth, then distalization and/or distal rotation of upper molars might be required by a cervical headgear, bumper, or sagittal appliance. If the molar movement is required only on one side of the upper, a cervical head-gear will usually be successful by moving the outer bow of the head-gear out from the side of the face (two inches or 5 cm.) on the side requiring more distal movement. A removable sagittal appliance can also be used for distalization. In the lower arch, a bumper is usually used, but will work in a bilaterally symmetrical way. No wires, cleats, springs or any adjustments to the Occlus-o-Guide® are needed for premolar crossbite corrections.

Molar crossbites - Molar crossbites are more difficult to correct because there is no forceful stabilization of the buccal and lingual flanges by a tooth distal to the first permanent molar. The flanges are not large enough or distally positioned enough for a second molar to significantly stabilize the flanges, as in the premolar crossbite-correction example above. As a result a "crossbite" wire has to be fabricated and secured usually into the lingual flange to place a buccally-directed force against the malpositioned molar. If the molar requires lingual movement, the "u" shaped wire must be placed into the buccal flange. This wire is made of 0.030" (or 1 mm.) round retainer wire shaped like the letter "u" (Fig. 1). The extended curved legs are secured into the lingual (or buccal) flange by heating the wire red hot prior to placement. The two ends of the "crossbite wire" are heated by a sharp blue flame while being held by serrated pliers (e.g. Howe). When the two ends are red hot, the ends of the "u"-shaped wire are pushed about 7 mm. into the lingual flange of the Occlus-o-Guide® (Fig. 2). The "N" series Occlus-o-Guide® is usually used instead of the "G" series because there are larger flanges in the area of the molars. If deciduous molars are present, the interproximal ridges are trimmed to accommodate these teeth. The "N" series appliance might also have to be slightly shortened posteriorly if the second permanent molars are not present.

The top horizontal section of the "u" shaped cleat places a buccally-directed force against the gingival area of the crown of the first molar if it has to be moved to the buccal. The crossbite is usually

corrected within 2 to 3 months. Again, there should be adequate space for the correction and the patient should actively exercise 2 to 3 hours per day for the correction to properly take place. The patient should tip the appliance about 45° when inserting it into the mouth in order to properly engage the wire without getting it caught between the upper and lower molars on the side of the crossbite.

Complete unilateral posterior crossbite in the mixed dentition - In these cases, it must first be determined whether there is a mandibular displacement present that can cause a unilateral crossbite upon full closure. **When such a displacement is present**, it first must be corrected by bilaterally expanding the maxillary arch before using the Occlus-o-Guide® appliance. A suggested mandibular displacement is verified by closely watching the mandible close from rest position to first contact and then asking the patient to fully close and watching carefully to see if the mandible displaces itself to one side or the other in order to obtain full closure. In the full contact closure, the mandible will be shifted to one side by obviously displacing itself to one side. Once the upper arch is bilaterally expanded, the mandible will then close from rest to full occlusal contact without being displaced and the midline discrepancy often improves significantly. At that time the Occlus-o-Guide® appliance can be used to correct any remaining problems if necessary. If, on the initial examination, the patient closes from rest position to full contact and **the mandible does not shift to one side in displacement**, but goes directly without any side shift to a full occlusal contact with the crossbite present on one side, the patient then is said to have a "dental" crossbite. These can be treated easily by the Occlus-o-Guide® appliance without the need for prior expansion. A crossbite "cleat" can be used in these cases as is shown in Figures 1 and 2. Usually only one crossbite wire on the first permanent molar is all that is necessary to correct the posterior crossbite even if this crossbite includes both deciduous molars and canine on one side. In rare instances, where the single crossbite cleat does not work, then similar cleats are placed lingual to each of the deciduous molars and canine as well. The appliance shown in Fig. 2 was used successfully to correct a crossbite involving the first permanent molar as well as both deciduous molars and canine on the same side with the one single crossbite cleat.

Crossbites not recommended to be corrected with the Occlus-o-Guide® appliance - As mentioned above, when there is a mandibular displacement, the maxilla should be bilaterally expanded to obtain symmetrical mandibular closure without deviation prior to Occlus-o-Guide® use, particularly in the late mixed dentition (9-11 years of age) or adult dentition (over 12 years of age). Bilateral crossbites involving both sides are not amenable to correction with the Occlus-o-Guide®. Similar type cases requiring maxillary enlargement or rapid palatal expansion are also not appropriate. At earlier ages, such as 7-9 (or younger) minor bilateral crossbites can often be corrected by the Occlus-o-Guide® appliance alone. Second permanent molar crossbites are not amenable to correction with the Occlus-o-Guide® appliance. Severe problems involving a complete telescoped bite, where the whole lower dentition is positioned lingual to the upper arch can usually be corrected very successfully by active wear (2-4 hours per day of exercise with passive nighttime use) with the Occlus-o-Guide®, and corrects usually within 3-4 months.

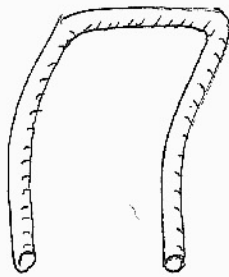


Fig. 1 - Illustration of .030" (1 mm.) round retainer wire bent as a "crossbite cleat".



Fig. 2 - Picture of actual "crossbite cleat" after the ends were heated and inserted into the lingual flange. The labio-lingual wires in the anterior segment were used to correct a midline discrepancy that was also present.

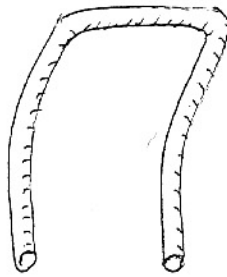


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