Problem Solver:

When an Open-bite has Developed During the Use of the Occlus-o-Guide® or Nite-Guide®

The most common cause of a developing open-bite during appliance use, is that the appliance does not cover the last erupting molars. For example, a "G" series is being used instead of the "N" series and the second permanent molars (usually uppers) have been allowed to over-erupt since they have no vertical contact occlusally with the appliance. The solution is to have the patient clench the teeth together in normal occlusion without the appliance in place, 200 times per day for about one month. Then, the next series ("N" series) is used that will adequately cover the occlusal surfaces of the second permanent molars and prevent their overeruption. The same can happen when the "C" series appliance is prolonged in its use after the first permanent molars are overerupting. At this point, the "G" series should be used to cover the occlusal surfaces of the first permanent molars after similar clenching exercises without the appliance in place. If there is a severe overbite to be corrected, however, one might consider simply substituting the appropriate “N” or “G” series without the clenching exercises which enhances the vertical correction and future stability of the overbite.

Another similar cause is when a patient finds the Occlus-o-Guide® (such as a "G" series) is irritating the enlarged tissue over the erupting crown of the second molar and takes it upon himself to cut off the back end of the appliance and remove the covering over the occlusal surface of the first molars. The erupting second molars then exert vertical force against the first molar to cause it to overerupt and temporarily can drive the bite open anteriorly to the first molars. The solution is the same as above: by clenching without the appliance and give the patient a new appliance that properly covers the first molars. Obviously if the posterior portion of the appliance irritates the tissue, it should be trimmed, by the doctor and not the patient, but not enough to completely uncover the crowns of the first molars.

A similar situation can develop at a later age with an erupting upper third molar, even before it breaks tissue, by exerting a downward force against the upper second molar. The second molar as a result can become supererupted or be displaced (tipped and rolled) to the buccal, which elongates the large mesio-lingual cusp and can artificially open the bite. The "N" series appliance has very short buccal and lingual outer walls in the region of the second molar because of potential gingival irritation and can at times allow the second molars to be displaced in a buccal direction. This can happen at about 16 years of age or older as the upper third molars begin their descent around the distal surface of the second molars. The solution most often involves the extraction or enucleation of the upper third molar. The lower third molar very rarely causes a similar problem.

An open-bite can also be caused by wearing the "G" or "N" appliance actively several hours per day after the overbite has been corrected. This can happen easily in cases with steep mandibular plane angles (over 39°) or with exceptionally long anterior face heights (N-Me beyond 2 S.D.).

It can also happen in children treated with an initial minimum overbite. The solution in these cases is to be observant and cautious toward the end of the overbite correction. When the final result approaches, the daytime exercise should be quickly reduced to just nighttime passive wear. Another aid is to slit the plastic of the appliance vertically from the upper incisal edges down through the lower incisal edges (of the upper and lower incisors or anterior teeth). This can be easily done with a sharp scalpel. The procedure eliminates any further depressive forces against the anterior teeth and actually encourages their free eruption without any interference by the plastic material in this area and encourages depression of the posterior teeth at the same time. One must be cautious in observing such cases for potential TMJ problems especially in those with excessively long anterior lower face heights.

The cases that sometimes exhibit this tendency towards an open-bite usually retain a corrected overbite extremely well, with little motivational effort on the part of the patient. It is for this reason that ideal retention in cases with minimal initial overbites is often obtained with only nighttime passive wear of the appliance. If this same case has had a correction of crowding or rotations of incisors, some form of additional retention might be necessary, such as a Hawley retainer, fixed lingual or circumferential fiberotomy for proper retention of these rotations.

In that a corrected severe overbite can be at times difficult to retain, the purposeful use of a short appliance that does not cover the most posteriorly-positioned molars can be quite useful in stimulating eruption of these teeth and can rapidly improve the overbite. For example, when an Occlus-o-Guide® "G" series should be used, the shorter Nite-Guide® is substituted, or when an "N" series is replaced by a "G" series, this can significantly speed the overbite correction. When the proper vertical dimension is achieved, the normal length appliance is substituted to prevent an open-bite from developing. It is therefore recommended that careful monitoring of the patient is maintained during this procedure.

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