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The Sagittal Appliance As a T. M. J. Splint

Voice of Experience

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The use of acrylic splints in the treatment of Temporal Mandibular Joint dysfunction has become a common practice in many dental offices throughout the world. These splints can be constructed in various styles and can be placed on either the maxillary or the mandibular arch. Regardless of their design there are two overall basic objectives in splint therapy. 1) To temporarily eliminate the entrapment of the mandible by the maxilla. 2) To allow the condyles to function in a new relationship within the glenoid fossa.

Different treatment philosophies address these two objectives in a manner that compliments their final treatment goal. For example, if my goal is reconstruction the mandible is repositioned and the condylar function stabilized at the point where the occlusion is to be rebuilt. If my goal is to finalize the occlusion through orthodontic therapy then the splint can be modified accordingly. In this discussion we will examine a patient where orthodontic therapy will be employed to finalize the case.

The patient seen in figures one and two presented herself as a forty year old female with all of the classic symptoms of acute Temporal Mandibular Joint Dysfunction. The treatment objectives were to eliminate the acute phase of the joint dysfunction; to develop the maxillary arch; to reposition the mandible and develop the mandibular arch; and to establish a balanced Class I occlusion.

This type of therapy would classically involve the use of first a splint, then a maxillary developmental appliance, then a mandibular appliance, followed by fixed appliance therapy. Our objective is to combine the first three stages into one. By doing so we cannot only reduce the treatment time, but also greatly simplify the appliance therapy. The treatment began by placing a modified maxillary sagittal appliance. (Figure 3).

The modifications included the use of occlusal coverage of acrylic, acrylic "bumpers" to the maxillary lateral incisors, reduced acrylic coverage of the vault for better speech, springs to the maxillary cuspids, and the elimination of the labial bow. The wax construction bite was taken with the mandible forward and the vertical dimension opened. The patient was instructed to wear the appliance full time removing it only for hygiene.

After four weeks the joints were asymptomatic and active adjustment of the appliance was initiated. The patient was instructed to turn both of the expansion screws once a week. After three months the maxillary entrapment of the mandible had been sufficiently eliminated to allow the placement of a lower crozat appliance. (Figure 4) At this point the occlusal coverage of acrylic on the maxillary



Figure 1



Figure 2

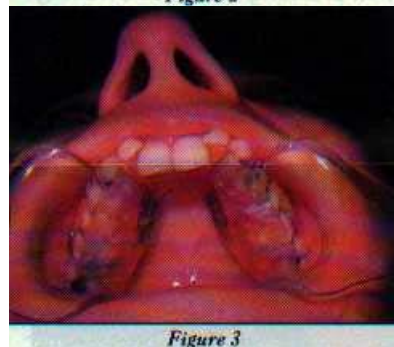


Figure 3

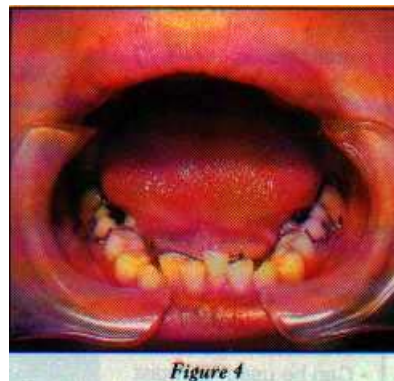


Figure 4

sagittal appliance was ground flat. Arch development was then completed in both the upper and lower arches. Note in (Figure 5) that as arch development was completed the mandible repositioned forward. This allowed both joints to decompress to a normal functioning relationship. Had this repositioning not occurred spontaneously then a RickANator would have been used to correctly position the mandible.

The final stage in the treatment of this patient was to establish a balanced Class I occlusion at the now correct maxillary and mandibular relationship. While this step can sometimes be accomplished through equilibration or reconstruction, this patient was stabilized with fixed appliance therapy. (Figure 6) shows the use of the Class II bow in establishing the Class I dental relationship.

Figures seven through ten show the patient's pretreatment casts and her occlusion two years out of all retention. It should be noted that she was free of all pain after her first four weeks of modified sagittal appliance therapy. The patient's total treatment time was twenty-four months. By combining a number of different functions within our modified sagittal appliance we were able to insure almost immediate relief of the patient's pain and greatly reduce our time of therapy. The fee for treating a case such as this is usually covered under the patient's medical insurance providing the dentist takes the correct records and knows how to complete the appropriate insurance forms. Our seminars are designed to give you the information and skill required to treat cases such as this, so give us a call if you would like further information. (18005212351)

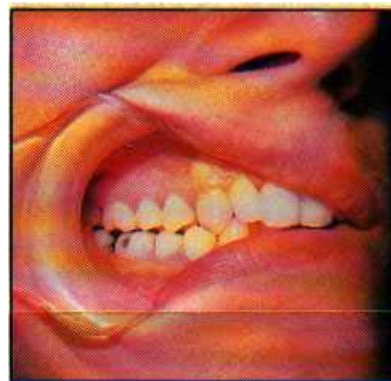


Figure 5



Figure 6



Figure 7



Figure 8

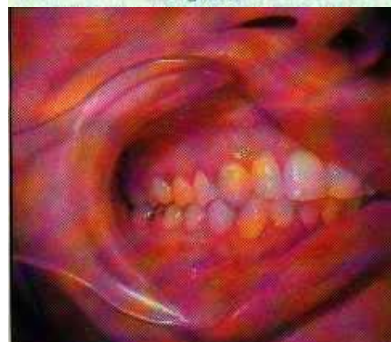


Figure 9

Voice of Experience (Q) Is there any easy way to remove ligature elastics and not have them falling loose into the patient's mouth?

(A) Yes, there is a special instrument for that purpose. It is double ended for access to all brackets and designed such that the ligature elastics collect on the instrument and do not fall off until they are wiped clean with a tissue. Try them, they are great time savers. We keep two in each operatory.

