EARLY BONDING OF DECIDUOUS TEETH TO PREVENT SEVERE FUTURE CROWDING

According to research, if there is crowding of the deciduous incisors, close to 100% of these cases will end up with permanent crowding[1]. On the other hand, most deciduous dentitions at about three years of age have some interproximal spaces between the deciduous posterior teeth, while most of these spaces are closed by five years of age[2]. This is caused by the mesial migration of the deciduous posterior teeth. If it is anticipated that there will be more than 4 mm. of permanent incisal crowding in the mixed dentition this situation can be prevented, or at least minimized, depending on the interproximal posterior spaces present at about three to four years of age. The recommendation would be to close these interproximal spaces with bonding to prevent the mesial migration of the deciduous posteriors which would normally close these spaces as the first permanent molars erupt through tissue. If 2 mm. per side is bonded, then an arch that has up to 8 mm. of potential adult crowding can be prevented from developing with the use of the Nite-Guide® appliance technique. This total of 8 mm. consists of 4 mm. of bonding and 4 mm. of deciduous canine stripping after the permanent incisors erupt. This stripping is possible due to the difference in the mesio-distal widths of the slightly smaller deciduous canine and larger deciduous molars compared to the combined widths of their permanent replacements.[3]

In order to increase the retention of the bonded material to the enamel interproximal surface of the deciduous tooth, it is necessary to slightly roughen the enamel by disking prior to acid etching. The acid etching should be applied for about two minutes or twice as long as normally done for permanent teeth. This bonding is intended to remain maximize the normal arch enlargement that occurs as the laterals erupt); (b) until it is suspected that gingival recession of any of the lower incisors might take place by postponing the removal of the bonding and/or deciduous canine stripping.

A technique that can also be applied in cases that are anticipated to be extremely crowded, or crowded individuals where no posterior interproximal spaces remain, is to add bonded material to the distal of the second deciduous molars in order to distalize the

eruption pattern of the first permanent molars. This also can alter the direction of the eruption of the first molars in a more distalized inclination, which has been shown to be associated with a decreased tendency toward incisal crowding.[4]

An alternative procedure to this distal bonding technique is the application of a bumper or headgear against the deciduous second molars prior to full eruption of the first permanent molars. One must, however, be sure there is space distal to the second deciduous molar (between it and the erupting first permanent molar) as evidenced in an intra-oral radiograph (not a Panorex film), in order to reduce the risk of the impaction of the first permanent molar as the deciduous second molar is distalized. Once the deciduous molar is distalized, the created space mesially to these teeth is bonded as described above.

References:

1. Leighton, B.C.: The early signs of malocclusion, *Tr. Europ. Ortho. Soc.,* 45th Congr., 353-368, 1968.
2. Baume, L.J.: Physiological tooth migration and its significance for the development of the occlusion. I. The biogenetic course of the deciduous dentition. II. The biogenesis of accessional dentition. III. The biogenesis of the successional dentition. IV. The biogenesis of overbite, *J. Dent. Res.,* 29: 123-132 331-337, 338-348, 440-447, 1950.
3. Moorrees, C.F.A., *The dentition of the growing child,* Harvard University Press, Cambridge, Mass., 1959.
4. Sanin, C., and Savara, B.S.; Factors that affect the alignment of the mandibular incisors: A longitudinal study, *Am. J. Ortho.*, 64: 248-249, 1973.

:ERLYBND, revised 10-08-96