Objective: The aim was to evaluate the effects of the occlusal splint on the growth of the alveolar base of the maxillary bone and on bruxism. Materials and Methods: A blind randomized clinical trial was performed. All the subjects were three to six year old, were healthy, had normal facial morphology, class I occlusion and complete primary teeth. The individuals were included in the study when their guardians related bruxism, they presented high level of anxiety according to Conners' Parents Rating Scales (CPRS), two or more signs of temporomandibular disorders (TMD) according to Bernal and Tsamtsouris and dental wear visually evident. The subjects were randomized and distributed in a control (n=17) and an experimental group (n=19). In the experimental group, a rigid occlusal programmed splint was installed. The children used it until the end of their primary dentition. Casts of the upper arch were taken every 6 months until the end of the study. The dental wear was digitized and the arch dimensions (Intercanine and intermolar distances, length and perimeter), were measured. The anxiety and the TMD were evaluated again in the control and experimental group at the end of the therapy in each subject. Data was then analyzed using the t-test and the Wilcoxon rank sum test. Results: The dimensions of the maxillary arch, the dental wear, the anxiety level and the TMD did not present any statistically significant difference between the experimental and the control group. Bruxism reported by the parents decreased in both groups. Conclusion: The use of a rigid occlusal splint did not affect the growth of the maxillary upper arch. However the treatment did not reduce the TMD, the anxiety level or the amount of dental wear in the studied children.