

Botulinum Toxin Type A (Botox) for the Neuromuscular Correction of Excessive Gingival Display on Smiling (Gummy Smile).

Polo M: *Am J Orthod Dentofacial Orthop*; 2008; 133 (February): 195-203.

Many patients are concerned by excessive gingival display or a "gummy smile." For some of them, the cause is excessive muscle contraction. The authors wanted to evaluate the effectiveness of Botox injections to improve gummy smiles due to excessive muscle contraction. 30 adult patients with gummy smiles caused by hyperfunctional upper lip elevator muscles received Botox injections at 4 different sites. Videos and static files were taken and compared to evaluate the changes in smile esthetics at intervals of up to 24 weeks postinjection. The average preinjection gingival display was 5.2 mm. This was reduced to <1 mm by 2 weeks after Botox injection. Gingival display gradually increased from 2 weeks postinjection through 24 weeks, but had still not returned to baseline values at 24 weeks. It was estimated that the amount of gingival display would not return to the original value for approximately 30 to 32 weeks.

Conclusions: Botox injections can be effective for treating patients who have gummy smiles due to hyperfunctional upper lip elevator muscles.

Reviewer's Comments: The data from the before and after photographs show very impressive results. The problem may reside in identifying patients who have a true hypercontraction of the upper lip. Also, we have to remember that Botox is a toxin and that the results are temporary. Is it really a long term solution or is it to satisfy a patient for a short period of time until he gets tired of the injection?

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The Quad-Helix Appliance in the Primary Dentition – Orthodontic and Orthopedic Measurements.

Vizzotto MB, de Araujo FB, et al: *J Clin Pediatr Dent*; 2007; 32 (2): 165-170.

The authors wanted to measure the dental and midpalatal sutural changes occurring as a quad-helix appliance is used for posterior crossbite correction in the primary dentition. The relative skeletal and dental changes resulting from quad-helix expansion in the primary dentition are not well understood and their purpose was to clarify this issue. 10 children, averaging approximately 5 years of age, undergoing expansion for the correction of a unilateral posterior crossbite were followed and there was no control group in this study. Treatment changes were monitored with measurements

from dental casts and from occlusal radiographs of the midpalatal suture. Dental casts and radiographs were made pretreatment, after active expansion, after 3 months retention with a passive appliance, and 1 month after passive appliance removal. Measurements were made of intercanine and intermolar widths from the casts and of sutural separation at the canine and molar areas. All patients had a soldered quad-helix appliance constructed and inserted with 8 to 10 mm of activation. The appliance was removed, reactivated, and re-cemented periodically until overexpansion of 2 to 3 mm was achieved. Once overexpanded, the appliance was removed, adjusted to be passive, and re-cemented as a passive retention appliance for 3 months and then removed.

Results: All 10 subjects had successful overcorrection of the posterior crossbite. The active expansion time averaged 60 days. The average intercanine and intermolar expansion was approximately 6 mm. After removal of the appliance, there was loss of 2 to 3 mm of width in the first month. The measured difference in sutural width was approximately 1 mm. The dental change was much larger than the observed sutural change.

Conclusions: The quad-helix appliance was successful in treating posterior crossbites in the primary dentition, with dental changes larger than the sutural changes.

Reviewer's Comments: This study has no control sample, which gives it relative value, but still it shows remarkable results that should have us reconsider our techniques of rapid palatal expansion. I have used the quad-helix appliance and find it very effective. With the palatal insertion tubes, either vertical or horizontal, this appliance is very easy to manipulate clinically.

The Relationships Between Malocclusion, Fixed Orthodontic Appliances and Periodontal Disease. A Review of the Literature.

Van Gastel J, Quirynen M, et al: *Aust Orthod J*; 2007; 23 (November): 121-129.

Older patients are getting more orthodontic treatment than ever. Adults often present with previous periodontal breakdown. What is the effect of malocclusion and/or orthodontic treatment? The authors reviewed the published literature on the periodontal consequences of malocclusion and those parts of fixed orthodontic appliances that retain dental plaque in proximity to the periodontal tissues to determine the impact on periodontal health, both short and long term. The results of this study indicate that dental plaque is the primary cause of gingival inflammation and periodontitis and that the gingivitis