



CASE REPORT

Rapid Improvement of Enlarged Tonsils Following Treatment with an ALF (Advanced Light Force) Appliance

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Dr. Bronson graduated "Cum Laude" from Georgetown University School of Dentistry in 1983. He and his son, J. Alex Bronson, DMD have a Holistic Dental Practice in McLean, Virginia, and a practice limited to ALF Orthodontics and TMD in Santa Cruz, CA. Dr. Bronson began his interest in the ALF with Dr. Brendan Stack in 2000, where he had the privilege of shadowing Dr. Stack one day a week for a year. He then studied the ALF through courses with Dr. Gerald Smith, Dr. Gavin James, Dr. Dennis Strokon, and Dr. Darick Nordstrom. In 2013, Dr. Bronson founded The ALF Educational Institute, LLC with the mission of providing structured and certified education in the functions, actions, and designs of the ALF appliances.

CHIEF COMPLAINTS

R.G. a 4-7 year old male presented for an orthodontic/orthopedic evaluation. His chief complaints included snoring, difficulty sleeping (restless sleep and awakens tired), mouth breathing, and large tonsils.

HISTORY

The medical history included an induced birth five days early with Pitocin. He had the cord wrapped around his neck and was purple at birth, had difficulty nursing, multiple allergies, chronic colds, tubes in both ears, frequent congestion, eczema, cradle cap, and restless sleep. He had periodic osteopathic treatments and had been evaluated by a myofunctional therapist, where he was identified as a mouth breather. Since birth his enlarged tonsils and allergies had been chronic despite numerous osteopathic and pediatric visits and modification of his diet to be dairy-free and gluten-free. There were no pets in the household. At 4 years old he was not cooperative with myofunctional exercises, and he was not able to tape at night. At age 4-5, soon before presenting for treatment, Ryan's general dentist saw the large tonsils and referred him to an ENT as soon as possible. The ENT noted the enlarged tonsils (Grade 3/4) with the history of snoring and sleep disorder breathing was suspected. His recommendation was tonsil and adenoid removal.

CLINICAL EVALUATION

The clinical evaluation at age 4-7 revealed facial asymmetry, a high palatal vault, a gummy smile, a Mew Indicator line of 35, a heavy maxillary frenum, a heavy lingual frenum, low tongue posture, forward head posture, head tilt to the right, maxillary and mandibular midline diastemas, mouth breathing, large tonsils with the left side completely occluded.

DIAGNOSTIC WORK UP

A diagnostic work up was performed that included photographs (intra- and extra-oral), models of the teeth and gums, and evaluation of a 3D conebeam computed tomography scan (i-CAT). (Figs. 1-8)

Evaluation of the CBCT imaging (age 4-6) revealed large tonsils and adenoids, a 75% congested left maxillary sinus, rotated cervical vertebrae, and a compromised airway. (Figs. 9-15)

TREATMENT OBJECTIVES

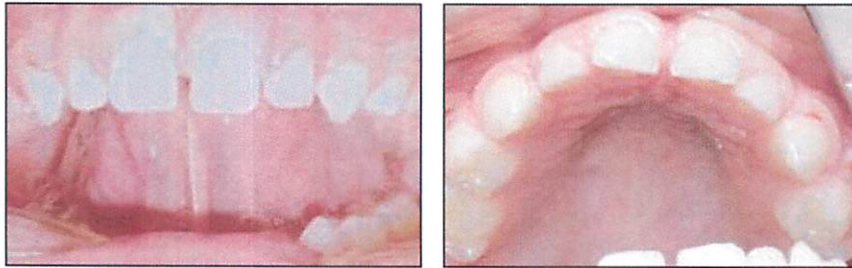
To expand the palate to improve nasal breathing, to improve the facial asymmetry by correcting the discrepancy in the jaw to cranial base, to shape the palate to accommodate the developing permanent dentition, to improve tongue rest posture position through palatal shape changes and toning, a lingual frenectomy, a maxillary frenectomy, and myofunctional tongue toning exercises.

RECOMMENDATIONS

Placement of a maxillary ALF appliance, cranial osteopathic treatment, myofunctional toning exercises, and breathing exercises were recommended. Once the child has mastered the myofunctional exercises a maxillary and lingual frenectomy are also recommended.

PROGRESS OF TREATMENT

A maxillary ALF appliance was fabricated with cribs on the second primary molars, crescents on the lingual of the primary cuspids with 3 omega loops, two posterior and one anterior. (Figs. 16-17) The ALF was bonded in place with composite ledges on the lingual of the primary cuspids and the buccal of the primary second molars. The height of the lower first primary molars was increased with bonded



Figures 1-8 - Initial records

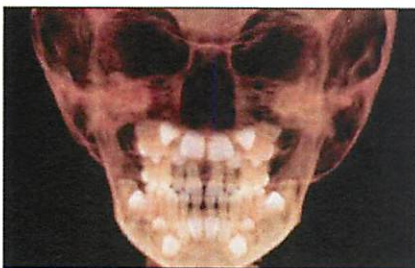


Figure 9 - Anterior CBCT



Figure 10 - Rotated Cervical Vertebrae



Figure 11 - Axial View Tonsils

composite resin about 0.5mm to disarticulate the cranial mandibular system. (Figs. 18-19)

R.G.'s parents reported that since the ALF placement (age 4-8) he had stopped snoring, he was sleeping better, he had more energy in the morning and he was breathing through his nose at night. His parents reported that his focus and attention improved dramatically. (Fig. 20)

Three months after beginning treatment he started taping his mouth at night, and a month later he started wearing a lip shield at night instead of taping. (The lip shield is a custom made 3mm soft night guard material that is cut in an elliptical shape from the first primary molar region on the right side across the

anterior teeth to the first primary molars on the left, it is softened with a heat gun and when plastic inserted into the patient's mouth, and the patient is instructed to suck in to shape the shield.) The lip shield encourages nasal breathing; it allows the lower jaw to move forward and tones the lip muscles.

CONCLUSION

A rapid diminishing of the size of the tonsils and decrease in airway resistance took place within three months after ALF placement with conversion to nasal breathing. This is apparent by comparing the size of the tonsils on the second follow up visit at age 4-11 (Fig. 21) with the axial view of tonsils at age 4-6

(Figure 11), and the tonsil photograph at ALF insert, only three months earlier at age 4-8 (Figure 19). R.G. will continue to be monitored. The orthopedic/orthodontic development will continue through the primary dentition stage with the ALF appliance, and at the appropriate time the frenectomies will be performed.

DISCUSSION

During the initial 3 month treatment period, R.G.'s parents reported that the only change in his routine was placement of the ALF appliance. The author's theory is that the ALF functions as a biomimetic tongue, providing gentle continual sensory input to the palate which is then interpreted by the brainstem as a form of structural support that has been lacking because of the tongue-tie, immature swallow, and

poor oral muscle tone. The brainstem recognizes this biomimetic appliance as a return to the "long lost or never present" tongue in rest posture position, a normal functioning tensegrity balanced system. This balance in the oral tensegrity system, allows the emergence from the chronic state of sympathetic protection "fright and flight", the energy that had been required to maintain the chronic protection mode, can now be diverted to other systems, e.g. primitive reflex integration, hormone regulation, growth, proper sleep, etc. The ALF also facilitates alignment of the cranial complex, functions as a tongue trainer through the strategic positioning of the omega loops to encourage the positioning of the tongue on the palate at rest, and it serves as an orthodontic device to gently expand and shape the palate for both proper swallowing and accommodation of the developing dentition.



Figure 12 - Axial View Adenoids



Figure 13 - Sagittal View Left Sinus

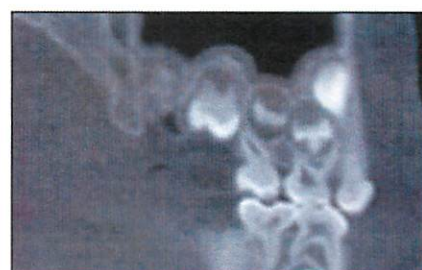


Figure 14 - Sagittal View Right Sinus



Figure 15 - Airway Evaluation

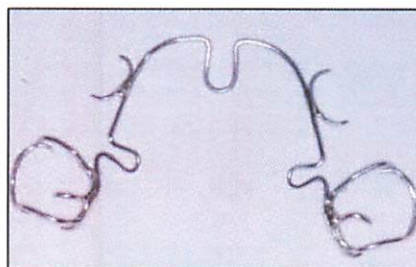


Figure 16 - ALF Appliance



Figure 17 - ALF Insert Age 4-8



Figure - 18 Occlusion with Pads



Figure 19 - Tonsils ALF Insert Age 4-8



Figure - 20 First follow up visit Age 4-10



Figure - 21 Second follow up visit Age 4-11