

Case Report

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Case Presentation: Resolution of an Oral Lesion as a Result of Orofacial Myofunctional Therapy

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ABSTRACT

This case presentation examines the etiology, evaluation and treatment of a 57 year-old-female presenting with an area of irritation/chronic lesion on the anterior lingual surface. Orthodontic history and lingual and labial postures are discussed.

Key words: tongue posture, weak tongue reflexes, otitis media, clenching, temporal mandibular joint pain (TMJ), swallowing and tongue thrust therapy.

INTRODUCTION

A 57 year old female patient was referred to my office by her orthodontist. Patient began noticing a sizeable area of irritation developing within her tongue tip, which became painful and worrisome in appearance. Her orthodontist suggested a "retraining program for the tongue." Patient initially desired to "retrain" the tongue herself, and attempted to "self-train" for 4-6 months, but was unsuccessful in this endeavor, as the lesion worsened in discomfort. She contacted her orthodontist who immediately wrote a referral for treatment as follows: "Please evaluate patient for a chronic tongue posture problem which has caused a chronic irritation to the tip of the tongue." An initial evaluation and assessment were performed, and results of this evaluation are detailed below.

EVALUATION SUMMARY

Tongue movement/reflex response: lateral-good; extension-good; and patient had the capacity to point; upward extension-strained; and downward-moderate. The tongue tip exhibited a semi-bifid appearance, and an area of chronic tongue abrasion/laceration was evident on the right side, dorsal surface, approximately 5 mm. in diameter directly on the tip of the tongue. Patient stated she found herself resting this area chronically low and against her lower retainer, and in-between teeth #24 and 25, abrading it both consciously and subconsciously. The diagnosis from her primary dental caregiver stated "lesion of chronic irritation." Intrinsic musculature was slightly reactive, with lateral tongue reflex activity in tact and moderately active, and the posterior reflex

activity appeared mild. The tongue bowl reflex formed only after repeated (40-50 taps) neuro-stimulation.

Tongue accommodation: Challenged. Patient tired readily from a tongue/straw posture exercise which was attempted.

Palatal shape: Adequate structure in which to accommodate the tongue and create and establish a well-functioning muscular environment. However, palate appeared to be light in color/milky-white, with excessively pronounced rugae, confirming limited palatal-lingual contact existed.

Lips: Lip posture was competent, and lips rested together at 100% frequency. Lip strength measured 5 lbs. strength on Chatillion scale. There was no arched or shortened upper lip form. The lips when in their normal rest position did cover the correct ratio of upper tooth surface.

Swallow: Type 1 anterior tongue thrust (against the linguals of the maxillary incisors.) With the squirt test, she was definitively against teeth #7-10 (the upper central and lateral incisors), and stated she felt her tongue posture down as well on occasion, positioned against the lingual surfaces of teeth #24 and 25 (the lower central and lateral incisors.) Food swallows seemed to elicit a more tongue down position than liquids. Basically, the tongue was self-contained within the arches, and the tongue exerted forward pressure along the linguals of the maxillary arch for liquids, and against both arches, on occasion, with the front tongue veering down for food swallows. The hyoid bone could be felt moving forward and down

strongly. A compensatory light lip pursing and squeezing could be seen as the patient swallowed. Lips were together completely while chewing and the masseters engaged for swallowing (with delineation present on profile.) When lips were pulled apart, the mentalis did not exhibit excess pressure against the supporting finger. The tongue was visible through a clear cup. There was a scooping behavior in saliva gathering, and the patient did not utilize the buccinator muscles to suck liquids onto the dorsal surface of her tongue and trap, but rather, she scooped the tongue onto the floor of the mouth, and then positioned the tongue for her forward swallow from that compromised position. There was a bilateral chewing pattern present.

TMJ: Pterygoids appeared weak, resulting in instability when opening and closing the mouth. There was a noticeable deviation upon opening as follows: Jaw began opening phase, opened approx. 1 inch; deviated noticeably to the left, and then as the open phase continued, shifted and swung noticeably to the right, completing with a noticeable deviation to the right and down in an "S curve" pattern. The patient observed this deviation issue immediately. She had a corresponding palpable shift and pop on the left, and stated she heard a "crack" upon performance of this task. Patient reported no TMJ pain at present or any TMJ discomfort or problems in her past. However, patient did report chronic ear pain and discomfort. She stated she is a night and day clencher, and wears a night guard at night. Her general dentist fabricated the patient a night guard 10 years ago when he observed wear facets on the molar and premolar areas. The patient has consistently worn the appliance on a nightly basis ever since.

Bite: Previous orthodontic treatment with current orthodontic retention appliances worn at 24-hour frequency. The midline appeared to have shifted 1/2 tooth width to the left, and tooth #7 lines up with teeth #27/28. Orthodontic history is as follows: First orthodontic treatment occurred between 1976 and 1977. Patient was placed in 24-hour retention, and underwent a transeptal fibrotomy procedure to alter the memory fibers in 1977 immediately following her orthodontia. In 1998, she underwent a second full orthodontic correction following the loss of her retainers overseas. She states the bite opened significantly shortly after failing to wear the retention appliances. In 1997-98, repeat

orthodontia was done, and completed with removable 24-hour retention. Patient was instructed to wear the retainer during the day. A newly fabricated mouth guard/splint at night. The low rest posture of the tongue caused the tongue tip to be in contact with the retainer on the mandibular arch, yielding the lesion, in addition to the chronic abrading against the interproximal surfaces of the linguals of teeth #24 and 25.

Overall posture: Head forward, shoulder rotation, which is most likely related to her orofacial muscular imbalance. Patient had a tendency to demonstrate this postural stance with a hyperextension of the neck.

Tongue Rest posture: Low, forward rest posture of the tongue, with majority of the tongue resting mid oral cavity and front/tip of the tongue positioned against the lingual surfaces of the lower arch, and on occasion, posturing interproximally on the lingual aspect of teeth #24 and 25, adjacent to and against the orthodontic retention device, resulting in the sizeable chronic abraded area/laceration as noted earlier.

Airway: The pharyngeal space appeared adequate, with tonsils absent. Nasal turbinates had a 2-3mm. interseptal space on the right, and 3-4mm on the left. The turbinate and interseptal spaces appeared inflamed/red and the left, although larger in width, appeared redder in color internally. Patient reported the frequent use of Ocean Nasal Mist saline nasal drops in the area for dryness and chronic irritation, which she related to her profession as a flight attendant. She was taking antihistamines at this time, and could breathe through the nose adequately. She utilized her nasal area as her main airway source. However, she reported a history of tonsil, allergy, and chronic ear issues throughout most of her early childhood, with subsequent tonsil surgery, and current active inhalant allergies, which do require treatment/medicine on occasion. Patient states her allergies were most reactive during flights where she was placed near passengers who were smoking, 5-10 years ago. Since that time, she has utilized mattress/pillowcase covers, and replaced the carpeting in her home with hardwood flooring. She had been treating her chronic ear and throat irritation daily with hydrocortisone drops, on the left side, for 2-3 years. The posterior pharyngeal wall appeared cobblestone and slightly inflamed

on the left. Elevation of the soft palate rise was a bit sluggish, but the lift, although slow, was adequate.

Lingual stretch, maximum opening, and frenum: 44mm on maximum opening, and 24mm on lingual stretch.

Linguo-Palatal seal: Incompetent in mid/posterior.

Speech: Pleasant, and acoustically correct. Cosmetically incorrect //.

Etiology: Thumb habit coupled with chronic airway/allergy issues, yielding development of a low-postured, flaccid tongue. Patient had a previous thumb habit, which she states was eliminated at age 10, in addition to the respiratory/allergy issues noted above. The patient exhibits low and forward rest posture of the tongue. She has an inadequate linguo-palatal seal, and she exhibits an incorrect swallowing pattern and orofacial myofunctional disorder. All these issues are major contributing factors to the development and maintenance of the oral lesion of concern. These contributing factors are negatively affecting the soft tissue of the tongue, via chronic irritation and must be addressed with orofacial myofunctional therapy if any resolution of this lesion can occur long-term.

Facial Symmetry: Extremely pleasing, with left eye higher, and right lip/jaw area lower, corresponding to the jaw deviation noted earlier.

RECOMMENDATIONS/TREATMENT PLAN

Plan was as follows: Started by working on establishing proper tongue and jaw rest posture, and extinguishing the clenching behavior via a behavior modification program. Patient needed to continue to successfully monitor her nasal issues (allergies and mouthbreathing) with her physician in order to insure long-term correction and stabilization of our work together. I did not anticipate a problem in this area, as patient has been diligent regarding her allergy meds, taking them on a daily basis. No mouth breathing was occurring at this time nor in the recent past. My initial goals were to maintain her lip competency and correct her abnormal tongue posture, and then progress to swallow/tongue thrust therapy. The saliva scooping issue was addressed, and

therapy was provided for her swallowing of food. Rest posture exercises addressed the repositioning of her tongue more posteriorly and elevated, with the jaw slightly open in normal freeway space of 1-3 mm. The Faulk neuro-stimulation exercises were used to elicit intrinsic musculature bowing of the tongue and to promote increased tonus and intrinsic lifting at the tongue.

This patient required this therapy due to the chronic irritation of her tongue, which caused her to develop an area of abraded tissue, i.e. oral lesion. Chronic irritation to the tongue surface can be a precursor to a variety of unfavorable oral lesions, which can worsen or progress with the passage of time. At the age of 57, one must be concerned with any source of chronic irritation to the oral cavity. The tongue rest posture was corrected at this juncture, and as a prudent, preventive measure, so this area of chronic irritation had the opportunity to heal properly, and be prevented from recurring, or progressing. Of course, correcting her tongue posture had the added benefits of improving overall posture and cervical posture, maintaining her orthodontically corrected occlusion, and adding stability to the jaw deviation issues.

DISCUSSION OF TREATMENT

Patient was an enthusiastic participant in the therapy process. Following a series of weekly appointments, the initial muscle training phase yielded beautiful results in increased tonus. Rest posture awareness began at the initial visit. Approximately 4 weeks into the therapy process, healing of the surface of the lesion was readily apparent. Tongue bowl, and all weak tongue reflexes were establishing, correct swallow patterns were developing, and the behavior modification program for the clenching was progressing. At two months into the therapy process, when food therapy was underway, the lower retainers were eliminated per her orthodontist's recommendation, and the mouth guard was weaned per her request. At three months, patient had established 80% swallow habituation, and at four months, 90% was achieved. Patient succeeded on 98% habituation at five months, with maintenance to 95%-98% at eight months. Patient has been and will continue to be followed at 4-month intervals, and then yearly following 3-4 month check-ups. At five months, patient reported an

absence of ear pain and had stopped the usage of ear drops. At eight months, patient had used her ear drops only on occasion. A presentation by Barbara Erskine (1999) at the IAOM New Orleans convention explored the correlation between improper swallowing patterns and chronic otitis media due to inadequate pumping of the palatal aponeuroses, resulting in failure to clear the Eustachian tubes and equalize pressure. This patient's outcome certainly confirms this hypothesis.

This patient gained multiple benefits from the orofacial myofunctional therapy program—habituation of normal muscle function, increased

muscular support of the TMJ complex, elimination of the bruxing behavior, disappearance of the oral lesion and its discomfort, reduction of the chronic ear difficulties, and stabilization of the bite. Orofacial myofunctional therapy can provide multiple benefits for a variety of patients outside the normal realm of garden-variety orthodontic concerns. It behooves us as practitioners to educate potential referral sources to these potential benefits, which can be significant.

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