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THE EDITOR'S CORNER

The Role of the Frenum

Soft-tissue analysis constitutes a vital component of orthodontic diagnosis and treatment planning. Routine soft-tissue evaluation should include an assessment of the health, position, and physiological activity of the gingivae, oral mucosa, tongue, lips, cheeks, orofacial musculature, and associated anatomical structures. Smiles are assessed in profile for lip position and fullness, using a reference such as the S or E line, as well as frontally for gingival display and for lip position relative to the upper incisal edges. Periodontal tissues are checked for the presence of any gingival or periodontal disease or pocketing and for the adequacy of attached gingiva. The achievement and maintenance of healthy, physiological soft-tissue relations are crucial to any concept of orthodontic success.

The role of soft-tissue position and activity in the etiology of malocclusion has been well documented. Lip posture and lip entrapment contribute to the exacerbation of flared upper incisors in many Class II, division 1 cases; because lip habits may result in open bites in the areas of the lateral incisors or even the cuspids, they demand special attention. Tongue posture, mobility, and activity are critical elements of the orthodontic examination due to the causal role of these factors in the etiology of anterior and posterior open bite, in speech development, and in determining the ultimate width of the palatal vault and its consequent effect on upper arch width and space availability. Tongue activity and posture are so important in the minds of some clinicians as to have spawned a small body of literature on myotherapy.

One type of oral soft tissue that may often be overlooked in routine orthodontic examinations is the frenum, whose name is derived from the Latin word for "bridle". Frenula of the mouth include the *frenulum linguae* under the tongue, the *frenulum labii superioris* inside the upper lip, the *frenulum labii inferioris* inside the lower lip, and the buccal frenula, which connect the cheeks to the gums. All told, there are normally seven oral frenula.

The effect of the upper labial frenum on the etiology of upper anterior midline diastemata and on the subse-

quent relapse of such cases is well documented in the literature. Although some authors suggest performing a frenectomy or frenuloplasty before closure of an upper midline diastema, while others recommend that the surgical procedure be done after closure, the evidence-based jury is still out on this question. Everyone seems to agree, however, that in the absence of permanent fixed retention, any persistent frenular tissue—muscle fibers and overlying mucosa—between the upper central incisors will reopen midline diastemata, no matter what procedures have been used to close them.

A quick search of the PubMed database reveals more than 450 papers on the upper labial frenum in the orthodontic, dental, and medical literature. An analogous search on the lingual frenum calls up far fewer articles, most approach-

ing the subject in a manner of only tangential interest to the orthodontist. In the current issue of JCO, Dr. Michael Northcutt helps fill this gap in the literature with an overview of the topic. He also presents the initial results of an exploratory observational study that he conducted on a sample of 600 patients from a pediatric dental practice. The contribution of aberrant lingual frenula to a variety of malocclusions, as revealed by this study, may seem surprising to many orthodontists. Dr. Northcutt hypothesizes that “ankyloglossia is the leading cause of non-skeletal orthodontic problems”.

Dr. Northcutt's article indicates that closer attention should be paid to the lingual frenum in every orthodontic examination. And as he points out, further research on the subject is sorely needed.

RGK