Acute Speech Impediment due to Abnormal Labial Frenum in a 5 Year Old Girl: A Case Report

Prasad Jathar, Amey Panse, Deepak Metha, Adwait Kulkarni

Abstract:
Healthy teeth & gingival tissues are important for esthetic appearance & good functional ability of a person's face. Abnormal frenal attachment may lead to orofacial problems. Abnormal lingual frenum (tongue-tie) which is commonly seen is a known cause for speech & masticatory impairment. This case report discusses a rare case of abnormal labial frenum which affected speech and mastication of a young child.

Key words: Abnormal frenum, Speech Impediment

Introduction
The maxillary frenum is a thin mucosal tissue that connects the upper lip mucosa to the gingiva between the upper central incisors. It is primarily made up of connective tissue, with a few striated muscle fibers, which arise from the muscle bundles of the lip on either side of the midline. Its function is to provide stability to the upper lip. Abnormal labial frenum may lead to many problems such as dental decay on the upper front teeth, gaps (diastema) between the two teeth, orthodontic or periodontal problems later in the child's oral development, poor lip mobility or function, especially during smiling and speaking; certain sounds, like 's' cannot be pronounced properly. In addition, a number of systemic conditions are associated with an abnormal frenum. Two potentially fatal conditions associated with a hyperplastic frenum are hypoplastic left heart syndrome and Ellis-Van Creveld syndrome. In contrast, hypoplastic or absent frena may be manifestations of infantile hypertrophic pyloric stenosis, and Saldino-Noonan syndrome (a fatal chondrodystrophy associated with multiple osseous and visceral abnormalities). Benign associations include orodigitofacial dystosis-in which hypertrophied labial, lingual, and lateral frenula produce clefts of the upper lip-and various other oral mucosal abnormalities. However, hyperplastic frena are often isolated anomalies and may be familial. In this particular case child was having difficulty in mastication & speech.

Case report
The patient was a healthy 5 year old girl child with midline diastema. On examination, abnormally large and thick labial frenum extending from labial mucosa to the interdental papilla between the two upper central incisors was present (Fig. 1). Tension test was performed for the frenal attachment, which was positive and measurement was done (Fig. 2). Similar presence of thick labial frenum was not seen in either of the parent or the sibling or any of the close relatives. There was no history of increase in size of the frenum. The patient had dull moderate pain. Pain was felt between the upper lip and anterior teeth (labial mucosa) during eating, blowing and during pronunciation of certain letters like 'p', 't', 's' etc. Patient had a discoloured left upper central incisor (history of trauma was present). Pulpectomy was done for the same around one year back. The tooth was asymptomatic.

After routine blood investigations, which were normal; surgery was performed under local anesthesia (Fig. 3) using surgical blade no 11. The surgical procedure was done in which the frenum was resected and the residual labial soft tissues were closed primarily using non absorbable 3-0 black breaded silk sutures, whereas the wound on the labial gingival was left open for secondary healing (Fig. 4). Post operatively the patient was prescribed a course of antibiotics and analgesics. After seven days the sutures were removed. Adequate wound healing was seen (Fig. 5). Follow up for the patient was done at 15th day, one month, three months and six months interval post surgery. Outcome of the surgery was satisfactory with remarkable improvement in speech and mastication.

Discussion
The superior labial frenum arises in utero from the front nasal process. The alveolar process causes the tectolabial frenum to be divided into 2 parts: the palatine papilla and the superior labial frenum. The attachment of the frenum to the gingiva moves progressively upwards and thins out as the alveolar process enlarges and maxillary incisors and canines erupt. Interruption of this process can result in an abnormally attached, hyperplastic frenum.

Hyperplastic maxillary frena are associated with a diastema of the upper central incisors and traction of the attached gingiva. It is uncertain whether the enlarged frenum causes the diastema or whether the diastema results in the abnormal frenum. A diagnostic test for an abnormal frenum is to pull...
the upper lip forward to see whether blanching of the tissue occurs interproximally from the labial to the lingua. It has been said that a truly abnormal frenum grows with age and simple enlargement of the frenum becomes less evident with age.

Management of hyperplastic frena with diastema is somewhat controversial. When the frenum is asymptomatic and not aesthetically displeasing, no intervention is required. When the defect affects speech or bothers the patient cosmetically, management usually consists of orthodontically closing the diastema with braces. This often results in spontaneous regression of the hyperplastic frenum. The frenum that does not spontaneously resolve after closure of the diastema is often excised.

However, there are reports of spontaneous closure of the diastema after excision of the frenum. The usual timing of excision, if needed, is during puberty. This is because the diastema often closes spontaneously on eruption of the permanent canine teeth. But in this case, frenectomy was done at a younger age because the chief complaint was pain during speech and mastication and not spacing between the teeth.

For extremely enlarged frenum, a lateral pedicle flap, free papilla graft, free gingival mucosal graft, or similar procedure is done in addition to a surgical or laser frenectomy to reform the oral mucosa. However, in our case we modified the traditional technique to avoid the co-morbidity of flap reconstruction. The frenum was resected and the residual labial soft tissues were closed primarily. This enabled primary closure of mobile tissues where as fixed tissues over the adherent periosteum underwent secondary epithilisation. Thus drawbacks, viz., contracture and flap morbidity were effectively bypassed to achieve an optimum result. Gradual resolution of the diastema and speech issues was observed during follow-up.

**Conclusion**

Abnormally high labial frenum attachment could be one of the possible causes for speech impairment. Treating at an early age prevents worsening of the problem. Frenectomy being a simple surgical procedure, the clinician should consider this while treating speech and masticatory problems.

**References**


How to cite this Article: Jathar P, Panse A, Metha D, Kulkarni A. Acute speech impediment due to abnormal labial frenum in a 5 years old girl. J Dent Allied Sci 2012;1(2):76-78.

Source of Support: Nil. Conflict of Interest: None Declared.