

Case Report

Solving the dilemma of midline diastema - Smile enhancer: A case report

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Abstract: The aim of this report is to enlighten the fact that by simple correcting with surgical approach, smile can be enhanced. With chief complaint of spacing in the upper front tooth region, thorough history taking, clinical examination and radiographic evaluation, among various options, the excision of the frenal attachment was planned. Astonishing results with simple surgical correction was proved. In conclusion it can be said that it is important to diagnose effects of frenum attachment on other surrounding structures. Before performing frenectomy, location of frenal attachment is necessary to diagnose and proper technique should be applied.

Keywords: Frenectomy, Frenal attachments, Midline diastema closure.

INTRODUCTION

A frenum is an anatomic structure formed by a fold of mucous membrane and connective tissue, sometimes muscle fibers. Through the growth of alveolar process as the teeth erupt, this attachment generally changes to assume the adult configuration [1]. It extends over the alveolar process in infants and forms a raphe that reaches the palatal papilla. The superior labial frenum is triangular in shape and attaches the lip to the alveolar mucosa and/or gingiva. Sometimes this normal structure is present as a thick, broad fibrous attachment and thus interferes with normal function of the upper lip and oral hygiene and causes compromised esthetics, diastema formation [2] and gingival recession. Taylor has observed that a midline diastema is normal in about 98% children between 6 and 7 years of age but the incidence decreases to only 7% in individuals of 12-18 years old and in some instances, the infantile arrangement is retained [3]. This high coronal attachment is generally associated with a hypertrophy of the frenum.

Depending upon the extension of attachment of fibers, frena has been classified as: i) Mucosal, ii) Gingival iii) Papillary and iv) Papilla penetrating [4].

Since the procedure of frenectomy was first proposed, a number of modifications [4-6] have been developed to solve the problem caused by an abnormal labial frenum.

There are numerous surgical techniques for the removal of labial frenum. In the "classical frenectomy"

by Archer [6] and Kruger [1] the frenum, interdental tissue and palatine papilla are completely excised leading to exposure of underlying alveolar bone and thus leading to scarring.

CASE REPORT

A 14-year-old patient reported to the Department with chief complaint of spacing in the upper front tooth region (Figure 1). Intra-oral examination revealed presence of high frenal attachment and midline spacing between maxillary central incisors (5 mm). A simple diagnostic test, i.e., blanching test was performed for an abnormal high frenum by observing the location of the alveolar attachment when intermittent pressure was exerted on the frenum. Space closure was done on 19X25 SS wire with boot hooks (Figure 2). After obtaining informed written consent from the parents, decision was made to remove high frenal attachment by a surgical technique.

Surgical procedure (Figure 3 and Figure 4)

Incision marking was done, gingival incision was placed. Holding the gingival tissues and cutting the second half, Diamond shape incision is placed. Bleeding was controlled by pressure pack, edges were approximated. Post-operative Instructions included regarding not to overstretch. Surgical defect was closed by suture placement and periodontal pack was placed for a week. At subsequent appointments, a remarkable improvement in the aesthetics was observed, due to spontaneous closure of midline diastema (Figure 5) thereby eliminating the chances of relapse [6].



Fig.1: Pre treatment intraoral and extraoral smile photograph



Fig. 2: Diastema closure



Fig. 3: Partial thickness dissection in attached gingiva

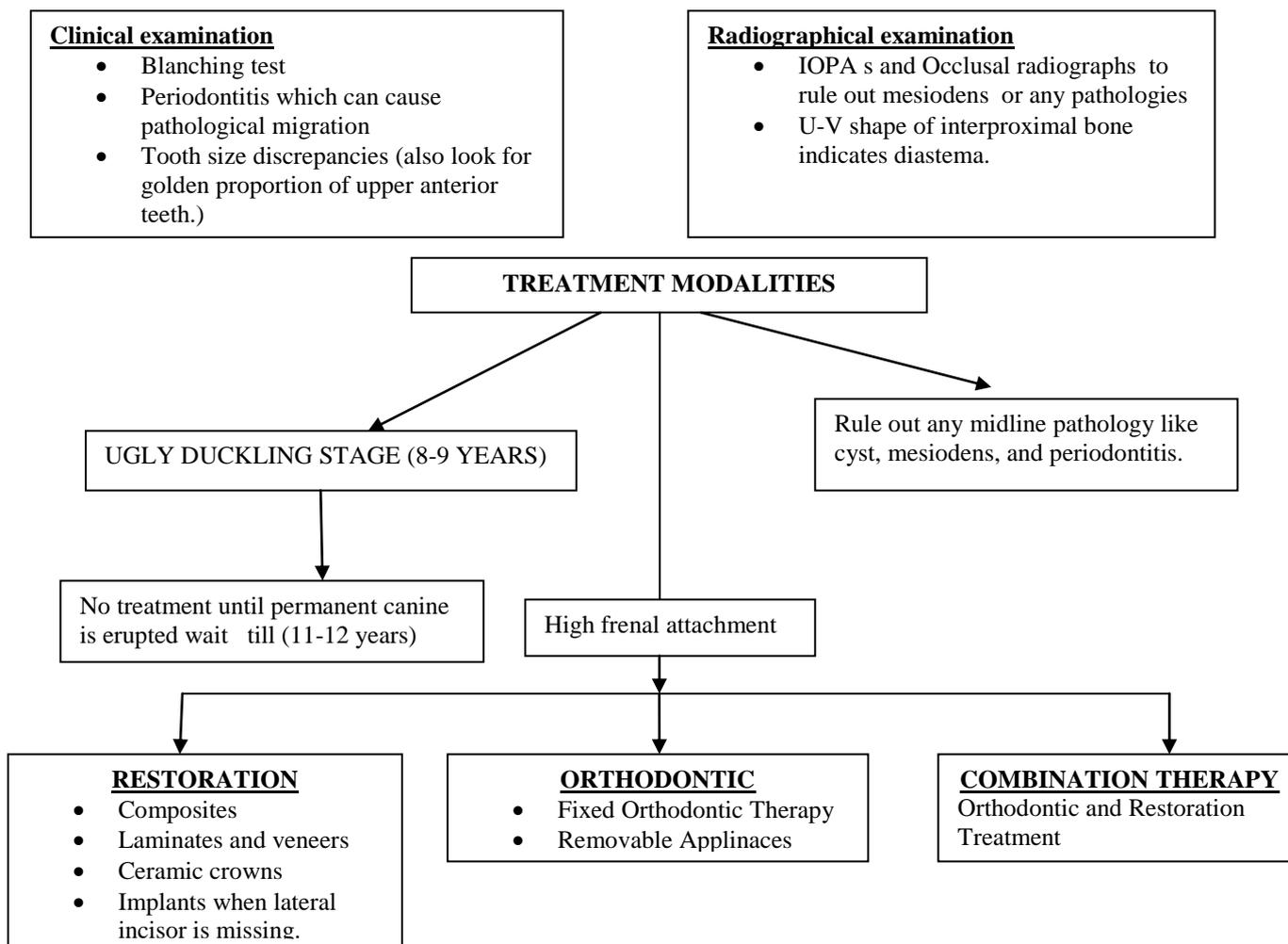


Fig. 4: Both the edges were brought closer. Advised not to stretch much



Fig.5: Post treatment and retention after 3 months & post treatment intra oral and extraoral smile photograph

Diagnosis and Treatment Options



DISCUSSION

There may be a number of reasons why patients present requesting diastema closure, including aesthetic and periodontal factors. With aesthetically compromised smiles, patients may become self-conscious, experience low self-esteem, and / or cover their mouths with their hands while speaking. Also, when diastemas result from significant tissue loss, which can change the airflow between the teeth, the reason for requesting diastema closure may be to correct obvious phonetic problems, particularly with ‘s’ and ‘th’ sounds. If the surgery is performed before the orthodontic procedure, the scar tissue might impede the closure of diastema but the noted advantages of excision after orthodontic tooth movement is the scar tissue formation which helps maintain closure of diastema. So it is important to diagnose effects of frenum attachment on other surrounding structures. Before performing frenectomy, location of frenal attachment is necessary to diagnose and proper technique should be applied.

Considerations for the article

- Etiology should be identified as accurately and as well as well - judged.

- Diagnosis should be made as precise as possible with proper clinical evaluation and thorough examination.
- Treatment plan should be well structured and should take into consideration what factors could be responsible, eliminating the etiologic factor should give a predictable result, and from a array of different treatment plans available, choosing them wisely that would benefit the most, which is done in the case mentioned.

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