

Vascular Anomaly in an Orthodontic Patient – A Case Report

Sivakumar Arunachalam

Separation of vascular lesions into one of the two groups, namely, hemangioma and vascular malformations can be of considerable significance relative to the treatment of patients. They pose serious bleeding risks. A case report is presented here where a patient with a vascular malformation is treated with fixed orthodontic appliances. A coordinated, interdisciplinary approach can result in enhanced patient satisfaction and successful treatment outcomes.

Keywords: *Vascular anomaly, Hemangioma, Nevus flammeus.*

Vascular lesions can be tumours or malformations. The terms (congenital) hemangioma and (congenital) vascular malformation have been used as generic designations for many vascular proliferations, and they have also been used interchangeably. Histologically, hemangiomas reveal a proliferation of endothelial cells in capillary walls that grow rapidly during the first year of life and usually disappear by the age of seven.¹ Malformations, on the other hand, do not disappear and enlarge slowly by hypertrophy as the child ages. Malformations may be arterial, capillary, venous, lymphatic or mixed.

Direct trauma, infection or hormonal factors, such as puberty, may trigger rapid growth.² Because of the confusion surrounding the basic origin of many of these lesions, classification of clinical and microscopic varieties has been difficult. Separation of vascular lesions into one of these two groups, namely, hemangioma and vascular malformations can be of

considerable significance relative to the treatment of patients. Unfortunately, in actual practice, some difficulty may be encountered in classifying lesions in this way because of overlapping clinical and histologic features.

A nevus flammeus is congenital permanent vascular malformation. In most cases nevus flammeus occurs in isolation, whether it is on the skin or intraorally. Oral lesions occur most commonly in the lips, tongue, cheeks or palate and vary considerably in size and shape. They are characteristically flat or raised soft, reddish-purple lesions. The lesions are usually asymptomatic, although there is a risk of ulceration or frank hemorrhage. Nevus flammeus may occur, however, in association with a variety of syndromes, some of which involve the face. The head and neck are common sites for isolated nevus flammeus, which tend to be unilateral, segmental, and in most cases do not cross the midline. The facial lesions can be a source of great emotional distress. In adult life, nodular vascular proliferations frequently arise within the previously flat tumors. Significant advances in the treatment of vascular lesions have been reported using medication, laser technology, interventional radiology (embolisation and sclerotherapy), and surgery.³

The case presented here was referred because of protrusive dentition which added to the profile convexity apart from already swollen lips. The facial lesion was diagnosed as a nevus flammeus involving the lower lip extending into the left side of the face and neck and left side of the body (Figure I).

School of Dentistry, IMU University, Malaysia

Corresponding author:

Dr Sivakumar Arunachalam

School of Dentistry, IMU University, Malaysia

E-mail: sivakumar@imu.edu.my



Figure 1: Distribution of the lesion in the left side of the face, neck, and body.

The patient had undergone anterior mandibular osteotomy for the correction of deficient chin.

Diagnostic Assessment

The patient, aged 24 years, was referred to orthodontic treatment of proclined anterior teeth in order to achieve a good facial profile. Examination revealed a Class I molar relationship on a moderate skeletal 2 base with proclined lower incisors. The Frankfurt Mandibular Plane angle (FMA) and lower anterior facial height were increased. No intra oral swellings were evident. The left half of the dorsum of the tongue was pigmented. There was marked lower lip enlargement with no history of eye disturbances. There were no signs or symptoms of temporo-mandibular dysfunction. The upper and lower dental arches were spaced. Brownish-gray discoloration of the enamel was evident in the incisal and occlusal half of the anterior teeth and first molars, respectively in both the arches (Figure II).



Figure II: Intraoral photograph.

Note the spaced dentition and discoloration of enamel in the incisal third of the anterior teeth.

The panoramic radiograph showed all the permanent teeth except the left lower third molar. The alveolar bone levels at the lower incisor segment were reduced (Figure III). Cephalometric Analysis confirmed the clinical findings of a moderate skeletal Class II pattern with an ANB of 6° . The FMA was increased at 32° . The upper incisors were proclined at 125° and the lower incisors were proclined at 105.5° . The lower incisors were in front of A-pog line by 9 mm (Figure III).



Figure III: Panoramic radiograph and Cephalometric analysis.

The vascular lesion was diagnosed by a multidisciplinary team evaluation. It had been present since birth with no history of haemorrhage.

Management & Discussion

In the case reported here, the main presenting features were spaced and proclined upper and lower teeth. This could be attributed to flaccid upper and lower lips. The clinical diagnosis of extensive nevus flammeus on the left side of the body and lower lip posed bleeding risks associated with the lesions. Literature revealed that congenital vascular malformations are generally persistent lesions that grow with the individual and do not involute. The boundaries of the lesions are poorly circumscribed and may affect bone.⁴ There was no radiological evidence of bone pathology in this case. The brownish-gray discolouration in the crowns of the

anterior teeth and first molars could be attributed to the institution of tetracycline regimens to the patient postpartum about three to four months. This sign of discolouration may not be related to the syndrome per se.

Anterior segmental mandibulectomy (augmentation genioplasty) has been performed to improve the chin prominence. Mandible was reconstructed with 'L' plates and bone grafts put into the gap. Lip surgery is planned for a later date after completion of orthodontic treatment. Fixed appliance therapy was initiated to correct the incisor inclination over the apical bases. Since this case posed no evidence of hemorrhage during mandibular surgery and therapeutic extraction of first premolars was planned to achieve a good outcome (Figure IV).



Figure IV: Post orthodontic treatment.

Improvements in communication with, and education of, primary care providers, in combination with a coordinated, interdisciplinary approach, can result in enhanced patient satisfaction and successful treatment outcomes for patients with vascular lesions.

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