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CASE STUDY

USE OF ENLARGED GINGIVAL TISSUE FOR RECESSION COVERAGE: A CASE REPORT

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ABSTRACT

Gingival enlargement is often seen during puberty, characterised by enlarged, bleeding, and sometimes painful gingiva. As the person matures, the hormonal peak declines, usually bringing about a resolution of the enlargement. In cases where the enlargement does not subside, surgical intervention is required. This case report highlights such a situation in which the surgical management of the enlarged gingiva was done, along with the coverage of an adjacent denuded root surface.

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INTRODUCTION

Gingival enlargement or gingival overgrowth is a common feature of gingival disease, in which there is increase in the size of the marginal/interdental/attached gingiva or any combination of the above (Newmann *et al*., 2012). It can occur due to a variety of reasons, dental plaque being an important etiological factor. Systemic conditions, like hormonal changes, heavily influence the host response to dental plaque, resulting in what is commonly known as puberty/pregnancy-induced gingival enlargement. Puberty, being a complex process of sexual maturation, is responsible for changes in physical appearance and behaviour. These are related to increased levels of the sex steroid hormones, i.e. testosterone in males and estradiol in females (Angold *et al*., 1999). The incidence and severity of gingivitis in adolescents are influenced by a variety of factors, including plaque levels, dental caries, mouth breathing, crowding of the teeth and tooth eruption. Seen in both the sexes, puberty induced gingival enlargement is characterised by the onset of exuberant inflammation of the marginal gingiva, attached gingiva, and especially the interdental papilla (Glickman *et al*., 1974). The patient commonly presents with bleeding from the gums and the enlargement is mostly present on the facial surface, as compared to the lingual/palatal surface, which usually remains unaffected (Rose *et al*., 2004). Changes in the subgingival microbiota along with poor oral hygiene are responsible for this condition (Tiainen *et al*., 1992; Mombelli *et al*., 1990). This case report highlights the use of enlarged gingival tissue (puberty-induced) as a means of recession coverage.

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CASE REPORT

An 18-year old female patient, reported to the department of Periodontics with a chief complaint of bleeding and enlarged gums in relation to upper and lower front teeth for the past 6 years. She also complained of generalized sensitivity in her teeth. She noticed bleeding while brushing which stopped on its own. Her medical and dental history were non-contributory. On clinical examination, the marginal gingiva, the attached gingiva, and the interdental papilla were enlarged and bulbous on the facial aspect of #11, 12, 21, 22, 31, 32, 41, 42. In relation to #21, 32 and 42 the enlarged gingiva was covering 2/3rd of the tooth surface on the facial side. The enlarged gingiva was reddish-pink in colour. The gingiva was fibro-oedematous in consistency and it bled readily on probing. Miller's class II recession was seen on the facial aspect of #31 (Figure 1). Routine blood investigations revealed no abnormality. Based on the history and clinical findings, a provisional diagnosis of puberty-induced gingival enlargement was made.

Treatment was started with oral hygiene instructions, which were followed by thorough scaling and root planing. The patient was kept on regular follow-ups which included reinforcement of oral hygiene measures and re-evaluation of the gingival status. After one month, the oedematous component of the enlargement was reduced, leaving a relatively firm, enlarged gingiva (Figure 2). This was followed by surgical excision of the enlarged gingiva.

Figure 1. Pre-operative

Figure 2. One month after scaling and root planing

Figure 3. Area of recession in 31

Figure 4. De-epithelized recipient site

Figure 5. Rotated pedicle flap raised and placed on #31

Figure 6. Flap sutured

In the mandibular anterior region (#32), gingivectomy was planned (Figure 3). There was recession and sensitivity in the adjacent tooth (#31). Recession coverage was done in #31 using the excised tissue, which would have been otherwise wasted. The recipient site was de-epithelized to expose the underlying connective tissue (Figure 4). Then, a partial thickness rotated flap was raised from the donor site (#32), which was used for coverage of the denuded root of #31 (Figure 5). This flap was placed at the recession site and sutured using a 5-0 braided silk suture (Figure 6).

Figure 7. Fifteen days post-operative

Figure 8. Six months post-operative

Even after raising a partial thickness flap (with a thickness of 1.5 - 2.0 mm) the donor site had excessive gingival tissue. Therefore, it was excised and a physiologic contour was established. Post-operative instructions were given and the patient was kept on Amoxicillin (500mg), thrice daily for 5 days, and a combination of Aceclofenac (100 mg) and Paracetamol (500mg) was prescribed for 3 days. 10ml of 0.2% Chlorhexidine mouthwash was advised twice daily for 10 days. Patient was recalled after 15 days for suture removal and re-evaluation.

After 15 days, suture removal was done and tooth #31 showed 100% root coverage (Figure 7). The results have been maintained and have been re-evaluated till 6 months (Figure 8).

DISCUSSION

Sex steroid hormones directly and indirectly control cellular proliferation, differentiation and growth in target tissues. They exert their influence on keratinocytes and fibroblasts in the gingiva (Mariotti, 1994; Mealey and Moritz, 2003).

Estradiol induces cellular proliferation of gingival fibroblasts. Based on the greater number of fibroblasts present in the enlarged tissue, a better healing response was expected and by extension, a more stable attachment. Hence, it was used as a graft for coverage. The laterally repositioned pedicle flap has been used to cover an isolated, exposed root from as early as 1956 (Grupe and Warren, 1956). It uses the adjacent keratinised attached gingiva to cover the denuded root surface and gives a good percentage of success (95.5% mean root coverage and 83.4% complete root coverage) (Santana *et al*., 2010). It can be used as a full-thickness or a partial- thickness flap. The rotated flap, is a modification of the laterally sliding flap, that does not use a cut-back incision. A partial-thickness rotated flap was used for coverage of the denuded root surface in this case, since there was a 'reservoir' of tissue adjacent to #31. #31, 32, 33, 41, 42, 43 were mal-aligned and #31 was placed out of the arch. Ideally, orthodontic treatment should have been planned for #31 prior to root coverage, but since the enlarged gingiva would have hampered bracket placement, gingivectomy was done first.

Conclusion

Such a treatment plan for gingival overgrowth can change the way we view enlargements - from a mass of tissue awaiting excision, to a potential reservoir of fibroblasts and keratinocytes, that we can use for a variety of regenerative purposes; the best use of a wasted tissue.

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