

ESTHETIC MANAGEMENT OF PHENYTOIN INDUCED GINGIVAL ENLARGEMENT: GINGIVECTOMY FOLLOWED BY GINGIVOPLASTY

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ABSTRACT

Gingival enlargement is adverse drug reaction in patients those are treated with Phenytoin, immunosuppressants and calcium channel blockers. The enlargement affects the regular oral hygiene procedure, esthetic appearance, speech, nutrition, mastication, quality of life and also provides pathway for oral infection which have a serious problem for both the patient and the clinician. A case of gingival enlargement should be treated in following manner such as removal and substitution of offending drug, nonsurgical therapy, surgical therapy, and supportive periodontal therapy after every 3 months. The present case report describes the esthetic management of a patient with a phenytoin induced gingival enlargement.

KEYWORDS: Phenytoin, Gingival enlargement, Anticonvulsants, Drug-induced gingival overgrowth, Gingivectomy, gingivoplasty.

INTRODUCTION

Gingival enlargement is well documented side effect in patient who take phenytoin for treating epilepsy.^[1, 2] Phenytoin induced gingival enlargement lesions are not directly life-

threatening and may be tolerated by some patients without treatment and the quality of life is mostly compromised among affected individuals.

Clinically, Phenytoin induced gingival enlargement starts as a painless, bead-like enlargement of the interdental papilla, and extends to the facial and lingual gingival margins and usually, limited to marginal and attached gingiva and more frequently occur in the anterior region of the jaw. Although Gingival overgrowth causes major problems such as the maintenance of oral hygiene, difficulty with mastication, unesthetic appearance, impaired nutrition, oral diseases and periodontitis due to disfiguration of gingiva and also elevate the risk of infection and inflammatory complications during solid organ transplantation.

Nonsurgical approaches can reduce the size of the clinical lesions by up to 40%, mainly due to the elimination of bacteria and so complete resolution of lesion requires surgical intervention.^[3]

In this present case report, Combined management of phenytoin induced gingival enlargement *i.e.* Gingivectomy followed by Gingivoplasty process, have not only improved the esthetic appearance, the quality of life, oral hygiene, functional movement such as mastication but also reduced the risk of infection because of gingivoplasty procedure provides normal physiologic contour of gingiva, this lead to the firm attachment of gingiva with the tooth.

CASE REPORT

18 year old female patient reported to Out patient Department of Periodontology at Career P.G.institute of dental sciences & hospital, Lucknow, Uttar Pradesh with chief complaint of pain and swelling in the front teeth region of upper jaw since 6 months and had difficulty while mastication. Patient's medical history revealed history of epilepsy since 1- years and was under medication with phenytoin. On intra oral examination revealed that there is fibrotic gingival enlargement with nodular shape appearance seen on the labial surface of the maxillary jaw, leading to an unesthetic appearance.

In this present case report, gingival enlargement was satisfactorily treated with nonsurgical periodontal therapy including oral hygiene instruction, oral prophylaxis and drug substitution. However, due to incomplete resolution of the enlargement, Surgical excision of enlarged gingival tissue was done under local anesthesia by techniques of external bevel

gingivectomy. After external bevel gingivectomy, there were challenge to restore the physiologic contour of the gingiva and esthetic appearance which was obtain by gingivoplasty procedure because of patient (She) requested treatment which would eventually improve her smile. There were no post-operative complications created and the healing was uneventfull and satisfactory. The patient was followed-up regularly and there were no signs of recurrence at the end of 6 months. Patient was satisfied with the esthetic appearance and functional movement such as mastication.

Gingivectomy followed by gingivoplasty



(Fig-1: Preoperative)



(Fig-2: After Oral prophaylaxis)



(Fig-3: After external bevel gingivectomy)



(Fig-4: 7-days after external bevel gingivectomy)



(Fig-5: One month after external bevel gingivectomy)



(Fig-6: During gingivoplasty)



(Fig-7: After gingivoplasty)



(Fig-8: Resected tissue)



(Fig-9: 6-month after gingivoplasty)

DISCUSSION

Epilepsy is neurological disorder seen in humans and first line of drugs choice for treating epilepsy is phenytoin (dilatant).^[4] In 1938, Merritt and Putman was first reported the relationship between Phenytoin and gingival enlargement.^[1, 2] Other Drugs that induced gingival enlargement are the anti-hypertensive drug like nifedipine and the immune suppressive drugs like cyclosporin. According to Uzel et al. (2001) Phenytoin induced lesions are clearly the most fibrotic whereas cyclosporine induced lesions are highly inflamed and show some fibrosis, while nifedipine-induced lesions are mixed.^[5] Gingival enlargement have potential of cosmetic implications and also provides favourable environment for the growth of microorganisms which is a serious concern for both patients and clinician.

In contrast of pathogenesis, The proliferation of fibroblast like cells and epithelium is stimulated by phenytoin.^[6] In 1978, Hassell et al stated that in non inflamad gingiva, fibroblast are less active and do not respond to circulating phenytoin whereas fibroblast within inflamed tissue are in an active state as a result of inflammatory mediators.^[7] Also another vitro studies have shown that there is increase synthesis of glycosaminoglycans (GAG's) by fibroblast in gingival enlargement.^[8] thus degradation of collagen is decrease due to production of inactive fibroblastic collagenase.^[9] However, presence of both ingival inflammation and dental plaque act as a reservoir for the accumulation of drug because of Several investigators believed that inflammation is prerequisite for development of gingival enlargement.^[10,11,12] Thus, removal of local factors and good oral hygiene decreases the severity of the gingival enlargement and improve the overall gingival status. So the clinician should emphasize plaque control as the first step in the treatment of drug-induced gingival

enlargement and Discontinuation of the offending drug has been shown to reduce the gingival overgrowth and alternative drugs can be used but these measures fail to complete resolution of the enlargement, so surgical intervention is required for complete resolution of lesion. However, gingivoplasty should be performed to obtain normal physiologic contour of gingiva which enhance esthetic appearance and prevent plaque accumulation.

CONCLUSIONS

A case of drug induced gingival enlargement should be treated in a sequential order including, substitution of the drug, non-surgical therapy such as scaling & root planning and surgical therapy such as external bevel gingivectomy with gingivoplasty or internal bevel gingivectomy (Undisplaced flap) to obtain normal physiologic contour of gingiva, depending on type of gingival enlargement. Supportive periodontal therapy should be continued at every 3-month intervals because of oral hygiene as key factors in preventing and managing gingival overgrowth associated with these drugs.

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