

Management of Phenytoin Induced Gingival Enlargement

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Abstracts: Drug induced gingival enlargement is a proliferative fibrous lesion of the gingival tissue that causes aesthetic & functional problem. It is classified as a dental plaque induced gingival disease, as an evidence suggest that existing gingival inflammation may be necessary for development of enlargement & that proper plaque control can lessen its severity or recurrence. Currently there are over almost 20 medications including anticonvulsants, calcium channels blockers & immunosuppressants are associated with gingival overgrowth. A team approach involving periodontist, physician & anesthetist is a crucial step in successful management of such cases. This case report addresses the diagnosis & treatment of a case of drug induced gingival enlargement in a 12 year old female child. It was a known case of epilepsy with mental retardation and on Phenytoin since last 4 years & has never taken any dental treatment. The patient presented with generalized diffuse gingival enlargement in both maxilla & mandible arches involving buccal/ labial & lingual/palatal surfaces. Gingivectomy was carried in all 4 quadrants under G.A [Ashishkaur et al NJIRM 2014; 5(1) : 131-133]

Key Words: Phenytoin, Gingival Enlargement, General Anesthesia

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Introduction Gingival Enlargement (G.E.) is a group of disorders characterized by progressive increase in size of gingiva caused by an increase in sub mucosal connective tissue elements, mainly extracellular matrix. Hence the increase in tissue volume is primarily connective tissue response & not epithelial.¹ Enlargement can be caused by multiple stimuli & presents as single complaints in dental clinic².

Epilepsy is the most common neurological disorder in humans³. A widely range of drugs are available for treatment of epilepsy which aim to help patients to be free of seizures without adverse effects. The 1st reported case of G.E. due to chronic use of phenytoin was in 1939⁴. It is estimated that about 30 to 50% patients on phenytoin drug therapy develop significant gingival enlargement within 1-3 months of initiation of treatment^{5,6}. According to epidemiological report prevalence of this disease is about 15 -50 %⁷. Generally this condition can be managed either by substitution of the drug or non surgical therapy but in this particular case it was mandatory to treat it with surgery under G.A.

The no. of patients with oral lesions has greatly increased in the last 3 decades due to massive G.E. An affected child usually develops an abnormal swallowing pattern with difficulty in speech & mastication. The enlargement interferes with

maintenance of oral hygiene and complicates the existing condition.

Case Report: A 12 yrs old mentally retarded female reported to the department of periodontics with chief complaint of generalized swollen gums, since last 3 yrs. Parents of the patient gave the medical history of convulsions and was on treatment of phenytoin drug under the physician's guidance. Earlier by withdrawing the drug she had recurrent attacks of seizures. So since last 4 yrs, she was on regular drug therapy. Swelling of gums was symptomatic and poor aesthetics, difficulty in mastication & maintaining proper oral hygiene were other complaints.

Intra-oral examination revealed generalized diffuse nodular grade-3 G. E. involving both U/L arches which were reddish pink in colour, had a firm & fibrous consistency with altered contour having spontaneous bleeding. As patient was mentally retarded, she was not able to maintain proper oral hygiene & there by showing inflammatory changes of gingiva. The teeth were barely visible as enlarged gingiva has covered till the incisal/occlusal 3rd of teeth.

Based on clinical signs & symptoms & medical history, it was diagnosed as phenytoin-induced grade-3 G. E. After completion of phase-1 treatment, it was decided to perform gingival surgery under G.A. Considering her mental

retardation & physical activity, patient's co-operation for surgery under L.A. was compromised. It had become mandatory to do further treatment under G.A. Patient's pre-operative medical fitness certificate was received from patient's physician.

Full mouth external bevel gingivectomy procedure was performed by using Kirkland knives for incisions on all surfaces & Orban knives for interdental incisions. All gingival pockets were

excised, Granulation tissues were carefully curetted, calculus remnants were scaled and the areas were made clean. After achieving smooth, clean teeth surfaces with normally positioned gingival margins, surgical packs were applied & area was covered. The patient was recovered from G.A. without any complication. Post operative instructions & medications were prescribed & explained.

PRE -OPERATIVE.



POST -OPERATIVE.



Discussion: One of the main drugs associated with G.E. is the antiepileptic phenytoin which affects gingival tissues by altering extracellular matrix metabolism. It can occur after long term therapy

of other drugs like cyclosporin, nifedipine & nitrendipine. G.E. may be associated with physical development, retardation & hypertrichosis. G.E. may be due to nutritional & hormonal factors,

however these have not been completely established. The constant increase in size of gingiva may become responsible for delayed eruption & displacement of teeth, spacing & migration of teeth. This condition is however asymptomatic until the tissue starts to cover the occlusal surface of molars & become traumatized during mastication. Idiopathic G. E. may be congenital or hereditary. Although genetic mechanism is not well understood, most of the reported cases exhibit the condition of fibrous enlargement of gingiva due to hereditary factors.

In this case, diagnosis was confirmed from patients medical history as well as her intr oral & extra oral findings. To manage this case substitution of the drug was carried out which did not give any positive results. Even patient was kept under strict oral hygiene control but as patient was mentally retarded it did not give satisfactory results.

Histologically, G.E. is mainly due to increase & thickening of mature collagen bundles in connective tissue stroma. The nodular appearance can be due to thickened parakeratinized epithelium⁸.

Conclusion: Various modalities of treatment were proposed to outweigh the risk of recurrence but the only treatment of choice in this condition was gingivectomy to satisfy patient's aesthetics, psychological & functional needs. Maintenance of oral hygiene has a crucial effect on prognosis of the case. Long term follow up was recommended to evaluate the predictability of recurrence.

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