

Isolated gingival overgrowths: A review of case series

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Abstract

Clinicians are often intrigued by the varied manifestations of the gingival tissue. Gingival overgrowth is a common clinical finding and most of them represent a reactive hyperplasia as a direct result of plaque-related inflammatory gingival disease. These types of growth generally respond to good plaque control, removal of the causative irritants, and conservative tissue management. This case series highlights three different cases of localized gingival overgrowth and its management with emphasis on the importance of patient awareness and motivation.

Keywords: Drug-induced gingival overgrowth, gingival overgrowth, peripheral ossifying fibroma, pyogenic granuloma

Introduction

Gingival enlargement is a common observation in clinical practice that may occur as a result of a response to varied stimuli and/or interactions with the host and the environment. These lesions could be either localized to certain aspect of the oral cavity or generalized affecting larger areas. The possible reasons for this condition may be related to plaque, hormonal imbalances, or systemic-induced manifestation.^[1] These excessive gingival distensions may adversely affect speech, mastication, tooth eruption, esthetics along with major hindrance to the maintenance of routine oral hygiene.

Appropriate management depends on accurate diagnosis of the cause of lesion. Such cases should be treated in a methodical manner, involving a detailed medical history followed by conventional nonsurgical therapy. A surgical therapy may be desirable to preserve esthetics and functional needs. However, in order to maintain successful therapeutic outcome, it is crucial to create patient awareness and motivation, along with a timely recall visits.

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This case series describes three different conditions of localized gingival overgrowths and its management with prime emphasis on the importance of patient compliance.

Case Reports


Gingiva is a common site for either neoplastic or nonneoplastic lesions. Neoplasms are characterized by progressive autonomous growth that can be either a benign or a malignant course, whereas nonneoplastic lesions are usually inflammatory or represent a reaction to some kind of irritation or low-grade injury.^[2]

Most of these lesions have similar clinical findings such as sessile or pedunculated nodule located at the interdental papilla with color variations from pale pink to erythematous.

Case 1: Pyogenic granuloma

Pyogenic granuloma (PG) may occur in all ages and is predominant in the second decade of life in females.^[3] It is a common nonneoplastic, exophytic vascular growth often associated with the history of trauma or chronic irritation.^[2]

The present case reports a 23-year-old male patient who reported to the department of periodontology with the chief complaint of growth in the lower right front region of mouth since 1 year. The growth was not tender but created esthetic concerns for the patient. On detailed conversation with the patient, he revealed an occasional habit of smoking

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since 2 years with no contributory medical history. Clinical exploration revealed a pedunculated growth at the gingival margin with respect to lower right lateral incisor and canine, measuring 12 mm × 15 mm with an interproximal lingual extension [Figure 1a and b]. The color of the lesion was pale pink with the consistency being firm toward the coronal two-third whereas the lower one-third was erythematous and soft. In general, early stage PGs are highly vascular in appearance because they are composed predominantly of hyperplastic granulation tissue in which capillaries are prominent, whereas mature lesions tend to become firm due to the presence of more collagen network.^[4] There was a moderate amount of calculus present along coronal and subgingival areas of the oral cavity. An intraoral periapical radiograph revealed mild crestal bone loss with respect to 42 and 43. Hence, based on the location and clinical findings, a provisional diagnosis of PG was assigned. A treatment strategy was planned which included oral prophylaxis followed by review after 2 weeks for resolution of existing inflammation. Oral hygiene instructions were given and the use of chlorhexidine mouthwash (0.2% Clohex™, Dr. Reddy's Laboratories Ltd., Hyderabad, Telangana, India) twice a day for 1 week was advised. At the follow-up interval, the overgrowth still persisted and interfered with patients' function and esthetics. A differential diagnosis of PG, peripheral fibroma, and hyperplastic gingival overgrowth was suggested. Hence, an excisional biopsy was performed with attention to surrounding tissues so as to prevent recurrence. As per protocol, the excised lesion was sent for histological analysis. The surgical site was covered with periodontal dressing and patient was prescribed anti-inflammatory for 3 days.

The sections were stained using H and E stains and a detailed histopathological picture was obtained under ×10 magnification. The stained section showed parakeratinized stratified squamous epithelium, containing hyperplastic and edematous connective tissue dispersed at various sites within the lesion. Both intra- and inter-cellular edema were present. The underlying connective tissue stroma was delicate to dense and composed of fibroblasts, fibrocytes with collagen fibers admixed with abundant blood vessels engorged with red blood cells, which is considered a hallmark of PG. There was moderate, focal aggregation of chronic inflammatory cells chiefly comprising lymphocytes and plasma cells in few areas [Figure 1c].

The patient was recalled after a week and healing was found to be satisfactory [Figure 1d]. Correlating the clinical findings with the histological features, a diagnosis of PG was confirmed.

The patient is still on follow-up since 6 months with no evidence of recurrence. However, literature has reported about 16% of PG recur after excision in spite of being reactive hyperplasias.^[5]

Case 2: Peripheral ossifying fibroma

Peripheral ossifying fibroma (POF) is usually an isolated nonneoplastic growth on gingiva that is categorized as a hyperplastic inflammatory lesion. A common gingival growth, it is typically seen on the interdental papilla and is believed to comprise about 9% of all gingival growths. Females are more commonly affected, and anterior maxilla is the most prevalent location of involvement.^[6] The etiology of POF is uncertain and have been attributed to trauma or local irritants such as plaque, calculus, microorganisms, masticatory forces, ill-fitting dentures, and poor-quality restorations.^[7] Following the elimination of causative factors, excision of the lesion is the choice of treatment.^[8] The present case was observed in a 28-year-old male who arrived at the department of periodontology with a complaint of swelling of gums in the upper left back teeth which he noticed 1 month back. Detailed case history examination provided noncontributory medical conclusions, with no abusive habits. Intraoral examination revealed a sessile firm lesion interproximally between 26 and 27 [Figure 2a and b]. The lesion was asymptomatic. The antagonist tooth was missing. Minimal soft deposits were present on surfaces of teeth. An intraoral periapical radiographic view showed minimal crestal bone loss. A routine complete blood count revealed levels within normal limits. A tentative diagnosis of fibroma was made and patient was informed about the treatment plan. Initial nonsurgical treatment followed by an excisional biopsy of the lesion was planned. The patient was advised on the importance of oral care, which included brushing technique and prescription of chlorhexidine mouthwash (0.2% Clohex™, Dr. Reddy's Laboratories Ltd., India) was advised twice daily so as to prevent further disease progression and was recalled after a week. The lesion was excised with precision and the send for a histopathological evaluation. The results presented a lesion comprised of highly cellular connective tissue stroma comprising of delicate collagen and plump fibroblasts. At some areas, stroma appeared to be dense with ossifying areas assembled as bony trabeculae [Figure 2c]. Thus, based on clinical and histopathological findings, the final diagnosis was determined as POF.

As reported in literature, the average time interval for recurrence is within a 12 months period.^[9] However, in this present case, no recurrence was seen even at 2 years follow-up [Figure 2d].

Case 3: Pyogenic granuloma in combination with drug-induced gingival enlargement

Gingival enlargement is a known adverse effect of calcium channel blockers, especially the dihydropyridine group. It is a serious concern for both the patient and the clinician due to its unesthetic appearance and formation of new niches for periodontopathogenic bacteria. Among the calcium channel blockers, gingival enlargement has most frequently been described as an adverse effect following administration of



Figure 1: Case 1 (a) preoperative clinical picture depicting gingival overgrowth wrt 42 and 43, (b) lingual extension of overgrowth, (c) histopathological picture in confirmation with pyogenic granuloma, and (d) follow-up at 2 weeks postexcision

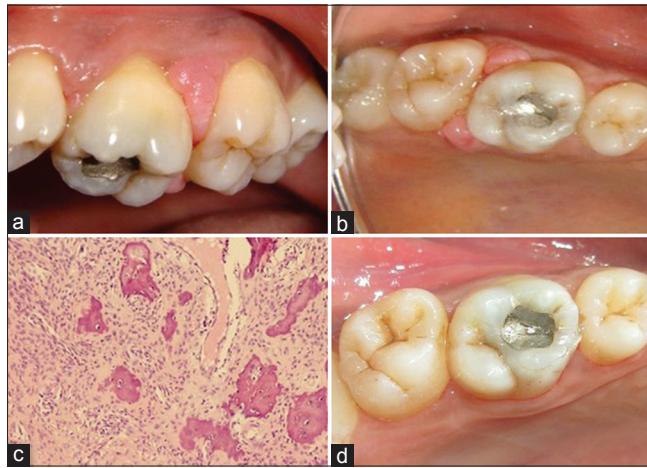


Figure 2: Case 2 (a) preoperative clinical picture depicting gingival overgrowth wrt 26 and 27, (b) palatal extension of overgrowth, (c) histopathological picture in confirmation with peripheral ossifying fibroma, and (d) follow-up at 2 years

nifedipine; however, the incidence with amlodipine is rare.^[10] In the present case, a 40-year-old female patient reported with the chief complaint of swelling in the lower front region of gums, which had been progressively increasing in size over the previous 6 months. The disfiguring gingival overgrowth was not only esthetically displeasing but also impaired access for oral hygiene. The patient’s medical history revealed that she is hypertensive since 8 years and was receiving a single dose of amlodipine 5 mg/day orally since the past 6 years. The patient had also reported of a habitual pan chewing since 12 years.

Intraoral examination revealed severe gingival enlargement with relation to lower labial anterior gingiva involving marginal and papillary gingival [Figure 3a]. The enlargement was pink in color, nodular, and slightly edematous with no surface ulcerations. A prominent nodular growth with a sessile base was also seen with respect to the lower right lateral incisor-canine area on buccal aspect measuring 10 mm × 15 mm, soft on palpation, and bleeding on provocation present [Figure 3b].

The oral hygiene status of the patient was poor. A provisional diagnosis of combined gingival enlargement was made for the patient. Patient was advised on cessation of habit and maintenance of oral hygiene with regular follow-up visits. She was referred to a physician for drug substitution who replaced amlodipine with atenolol, a beta-blocker.

A full mouth oral prophylaxis was carried out and the patient was placed on a regular recall for 3 months for reinforcement of oral hygiene practice and habit counseling. The patient had revealed satisfactory results and the gingival tissues had shown marked regression [Figure 3c]. The sessile growth revealed a reduction in size to approximately 7 mm × 9 mm [Figure 3d]. The patient mentioned discomfort on mastication and frequent food lodgment. Differential diagnosis for the nodular overgrowth included chronic

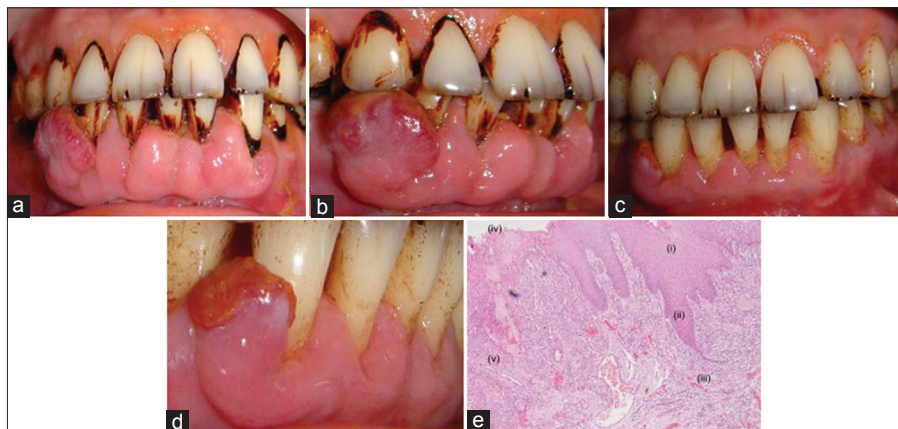


Figure 3: Case 3 (a) preoperative clinical picture depicting gingival overgrowth wrt lower anteriors, (b) isolated overgrowth wrt 42 and 43, (c) 4 months post nonsurgical therapy, (d) residual isolated overgrowth wrt 42 and 43, and (e) histopathological picture in confirmation with drug-induced gingival enlargement associated with pyogenic granuloma

inflammatory gingival enlargement, combined gingival enlargement, peripheral fibroma, peripheral giant cell granuloma, PG, and peripheral fibroma. Hence, an excision was necessary to be performed for maintenance of oral hygiene and to arrive at a definite diagnosis. The nodular lesion along with surrounding tissues was excised for a complete histologic analysis [Figure 3e]. The lesion presented interesting results with one-half of the histological picture showing parakeratotic stratified squamous epithelium with acanthosis and intra- and inter-cellular edema of superficial spinous cells in some areas [Figure 3e (i)], elongated rete pegs extending deep into connective tissue [Figure 3e (ii)] that exhibited densely arranged collagen fibers and new blood vessels [Figure 3e (iii)] suggestive of drug-induced gingival enlargement. The other half of the histological picture revealed ulcerations in the epithelium at places that were covered by fibrinous exudate [Figure 3e (iv)]. Connective tissue stroma was edematous, composed of delicate to dense collagen fibers, proliferating blood vessels, and markedly infiltrated by acute and chronic inflammatory cells [Figure 3e (v)] that are seen in PG. Thus, the biopsy picture revealed a combination of drug-induced gingival overgrowth associated with PG.

Previously, a case of amlodipine-induced gingival enlargement associated with fibroepithelial hyperplasia has been reported;^[11] however, there has not been any report of amlodipine-induced gingival enlargement associated with PG, to the author's knowledge.

Conclusion

It is possible to misdiagnose reactive lesions arising from the gingiva. A detailed case history to determine the etiology and histopathological examination is essential for an accurate diagnosis and for proper management. Clinical differential diagnosis for localized gingival overgrowths includes fibroma, peripheral giant cell granuloma, PG, peripheral odontogenic fibroma, and peripheral ossifying fibroma. A relatively healthy oral environment provided by the dentist and maintained by the patient will reduce local microflora that will help in eliminating the major focus of infection. A critical factor that assists successful therapeutic outcome is patient motivation and compliance. The patient should be placed on a regular

dental visit, in which a complete description of the existing dental condition should be informed. Creating awareness and educating patients regarding the influence of poor oral hygiene and habits to these gingival lesions are essential to avoid further recurrence.

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Conflicts of interest

There are no conflicts of interest.

References

1. Carranza FA, Hogan EL. Gingival enlargement. In: Newman MG, Takei HH, Klokkevold PR, Carranza FA, editors. *Carranza's Clinical Periodontology*. 11th ed. Philadelphia, Penn: W.B. Saunders Company; 2006. p. 373-90.
2. Shamim T, Varghese VI, Shameena PM, Sudha S. A retrospective analysis of gingival biopsied lesions in South Indian population: 2001-2006. *Med Oral Patol Oral Cir Bucal* 2008;13:E414-8.
3. Neville BW, Damm DD, Allen CM, Bouquet JE. *Oral & Maxillofacial Pathology*. 2nd ed. Philadelphia: W.B. Saunders; 2002. p. 437-49.
4. Jafarzadeh H, Sanatkhan M, Mohtasham N. Oral pyogenic granuloma: A review. *J Oral Sci* 2006;48:167-75.
5. Taira JW, Hill TL, Everett MA. Lobular capillary hemangioma (pyogenic granuloma) with satellitosis. *J Am Acad Dermatol* 1992;27(2 Pt 2):297-300.
6. Bhaskar SN, Jacoway JR. Peripheral fibroma and peripheral fibroma with calcification: Report of 376 cases. *J Am Dent Assoc* 1966;73:1312-20.
7. Gardner DG. The peripheral odontogenic fibroma: An attempt at clarification. *Oral Surg Oral Med Oral Pathol* 1982;54:40-8.
8. Kumar SK, Ram S, Jorgensen MG, Shuler CF, Sedghizadeh PP. Multicentric peripheral ossifying fibroma. *J Oral Sci* 2006;48:239-43.
9. Kale L, Khambete N, Sodhi S, Sonawane S. Peripheral ossifying fibroma: Series of five cases. *J Indian Soc Periodontol* 2014;18:527-30.
10. Research, Science and Therapy Committee. Informational Paper. Drug-associated gingival enlargement. *J Periodontol* 2004;75:1424-31.
11. Sharma S, Sharma A. Amlodipine-induced gingival enlargement – A clinical report. *Compend Contin Educ Dent* 2012;33:e78-82.