

## Localized Gingival Overgrowths: A Report of Six Cases

### Abstract

Localized gingival overgrowths are commonly encountered in our day-to-day clinical practice and often present a diagnostic dilemma to the clinicians. These lesions vary depending on the location, site, extent, histology, and/or etiopathology. Although most of the localized gingival enlargements represent the reactive lesion to plaque accumulation, the differential diagnosis ranges from peripheral fibroma to pyogenic granuloma to peripheral fibroma with ossification and/or calcification, peripheral giant cell granuloma, etc., Even the peripheral ameloblastoma may present clinically as a mere localized gingival enlargement. Therefore, proper histopathological diagnosis along with biopsy is necessary to effectively manage these lesions and to reduce their propensity for recurrence.

**Keywords:** Biopsy, gingival enlargements, localized, reactive lesion

### Introduction

The increase in size of gingiva is usually termed as gingival enlargements or gingival overgrowths and often associated with myriad of clinical presentations. They usually represent the reactive hyperplasia to dental plaque accumulation.<sup>[1,2]</sup> Plaque-induced gingival enlargement usually resolves with the proper plaque debridement. However, a small group of localized gingival enlargements may present the reactive/inflammatory hyperplasia resulting in nodular growths which histologically may present with myriad of additional features forming a wide range of differential diagnosis.<sup>[3-6]</sup>

Localized gingival enlargements historically have been termed epulides, a term describing pedunculated or sessile swellings of the gingiva with no specific histologic characterization.<sup>[7]</sup> However, nowadays, the term “epulides” has been replaced with focal reactive overgrowths as the etiological, clinical, and treatment modalities of these growths appear to be the same with slight variations.<sup>[8]</sup> This paper will highlight about the varied clinical presentations of localized gingival overgrowths with different histopathological characteristics giving each of them a unique nomenclature.

### Case Reports

Several patients were reported in the hospital outpatient department in West

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Bengal with the chief complaints of gum swellings presenting within the mouth for varied durations. The medical histories were found to be noncontributory upon investigations in all patients. On examination, solitary isolated gingival growths were observed in all the patients in different parts of the maxilla and mandible [Figures 1-6]. The detailed case reports for every case were summarized in Table 1. All these gingival lesions were surgically excised after elevation of full-thickness mucoperiosteal flaps. The areas were undergone thorough debridement, and sutures were given after achieving proper hemostasis. The excised tissue was then sent for biopsy, and based on histopathological examinations, a wide range of diagnosis was made ranging from peripheral fibroma to pyogenic granuloma to peripheral fibroma with ossification and/or calcification, peripheral giant cell granuloma, and peripheral ameloblastoma. All the patients were advised for periodic checkups, and no recurrence was reported till date.

### Discussion

Localized gingival overgrowths usually present with a wide variety of clinical and histopathological features giving each of them a unique clinical identity. These localized gingival enlargements have been clinically grouped as focal reactive overgrowths as these growths are reactive gingival responses to chronic,

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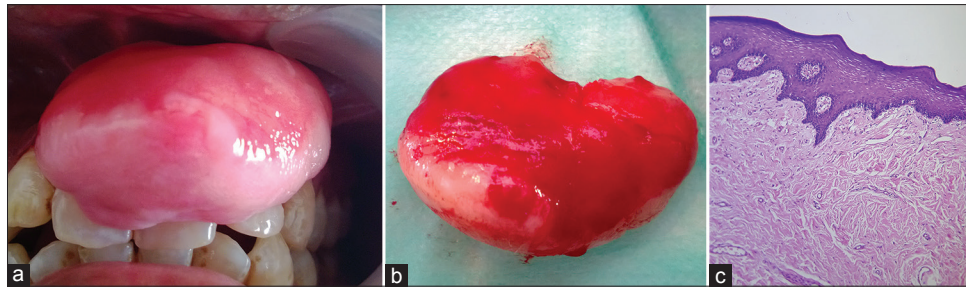


Figure 1: (a) Clinical presentation of peripheral fibroma. (b) Excised tissue. (c) Histopathological features suggestive of peripheral fibroma

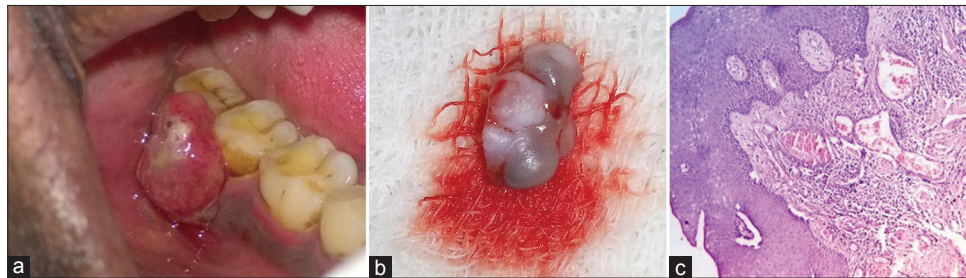


Figure 2: (a) Clinical presentation of pyogenic granuloma. (b) Excised tissue. (c) Histopathological features suggestive of pyogenic granuloma

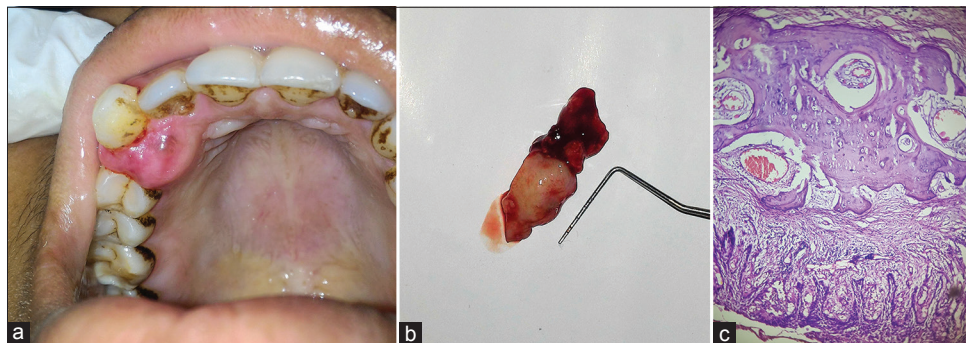


Figure 3: (a) Clinical presentation of peripheral ossifying fibroma. (b) Excised tissue. (c) Histopathological features suggestive of peripheral ossifying fibroma

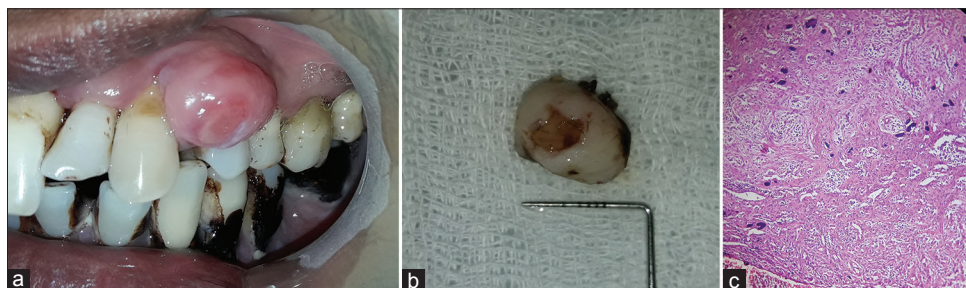


Figure 4: (a) Clinical presentation of peripheral fibroma with calcification. (b) Excised tissue. (c) Histopathological features suggestive of peripheral fibroma with calcification

low-grade irritation caused by plaque and calculus or any other irritant.<sup>[8,9]</sup> However, histopathologically, they may differ based on duration of the lesion and intensity of inflammation.<sup>[9]</sup> However, within these groups, the peripheral fibroma is most commonly encountered, followed by pyogenic granuloma, peripheral fibroma with calcification, peripheral giant cell granuloma, and the peripheral ameloblastoma.<sup>[2-6]</sup> They can usually occur at any site along the free gingival margin and

characteristically grow out from the gingival sulcus with a cervical displacement of the gingival margin.<sup>[2,4]</sup> The male-to-female distribution ratio may range from 1:1.31 for peripheral fibroma to 1:1.99 for angiogranuloma and 1:1.5 for peripheral giant cell granuloma with dominant presentation in the maxilla.<sup>[2,10]</sup>

Since the histopathological evaluation is the only single most criterions to distinguish them from each other, each

**Table 1: Clinical presentation of cases**

Chief complaint of the patient	Clinical and radiological characteristic features	Management	Histopathological features	Diagnosis	Postoperative instruction
A male patient of 48 years reported with the presence of a swelling in the upper portion of the gum for the past 6 months	A solitary, erythematous, firm, sessile, nontender growth was noted in 11, 12, 21, 22 region. The growth did not bleed on provocation. Radiology revealed no abnormality on the affected area	Surgical excision of the mass was carried out after full-thickness mucoperiosteal flap elevation followed by debridement. The excised mass was sent for biopsy	The presence of dense fibrous connective tissue covered by stratified squamous epithelium with shortened rete pegs were noted	Fibroma/ peripheral fibroma/ fibroepithelial polyp [Figure 1a-c]	Periodic checkups and oral hygiene maintenance
A male patient aged 38 years reported with a complaint of swelling and bleeding from gum in the right lower jaw for the past 3 months	A solitary, reddish pink, pedunculated, soft, gingival growth which bleed on provocation was noted in the interdental area of 47, 48 region. Radiology revealed no interproximal bone loss	Surgical excision of the growth was carried out cautiously and precautions were taken to control the bleeding and the excised growth was sent for biopsy	The presence of numerous endothelium-lined channels engorged with the blood vessels were noted within the connective tissue stroma along with neutrophilic infiltrations	Pyogenic granuloma/ angiogranuloma [Figure 2a-c]	Periodic checkups and oral hygiene maintenance
A female patient aged 35 years reported with the gum swelling in the right upper front teeth region for the past 4 months	A solitary, pinkish white, firm, nontender sessile, growth was noticed in 12, 13, 14 region, and it was also involving the palatal mucosa. The growth was found to displace canine (13) tooth more buccally. No abnormal bony characteristics were observed radiologically	Surgical excision of the mass was carried out after full-thickness mucoperiosteal flap elevation followed by debridement. The excised mass was sent for biopsy	The presence of fibrous proliferation within the connective tissue stroma was noted along with the presence of mineralized, ossified product	Peripheral ossifying fibroma/ ossifying fibroma [Figure 3a-c]	Periodic checkups and oral hygiene maintenance
A male patient aged 45 years reported with a complaint of swelling in the left upper jaw region for the past 8 months	A solitary, pinkish white, firm, sessile, nontender growth was noted in 23, 24, 25 region. Radiology revealed no abnormal bony characteristics	Surgical excision of the mass was carried out after full-thickness mucoperiosteal flap elevation followed by debridement. The excised mass was sent for biopsy	The presence of calcified material within the dense connective tissue appearing as dystrophic calcification was noted	Peripheral fibroma with calcification [Figure 4a-c]	Periodic checkups and oral hygiene maintenance
A female patient aged 40 years reported with a complaint of swelling in the lower posterior jaw region for the past 3 months	A solitary, soft, port-wine-colored, nontender growth was noted involving 34, 35 regions. No bone loss was observed radiologically	Surgical excision of the mass was carried out followed by debridement and sent for biopsy	The presence of multinodular foci of mononuclear giant cells was noted within the highly vascular stroma	Peripheral giant cell granuloma [Figure 5a-c]	Periodic checkups and close follow-up visits due to high chances of recurrence
A male patient of 45 years reported with a complaint of the presence of swelling in the right lower jaw for the past 7 months	A solitary, soft, sessile, reddish pink, gingival growth having pebbled surface was observed in 43, 44, 45 regions. Interproximal bone loss was noted	Surgical excision of the mass was carried out after full-thickness mucoperiosteal flap elevation followed by debridement. The excised mass was sent for biopsy	The presence of islands of ameloblastic epithelial cells arranged in plexiform pattern was observed beneath the epithelium	Peripheral ameloblastoma [Figure 6a-c]	Close follow-ups at shorter intervals

of them should be subjected to biopsy for confirmatory diagnosis. Histologically, peripheral fibroma is usually appeared as nodular mass of dense fibrous connective tissue stroma, whereas pyogenic granuloma is appeared

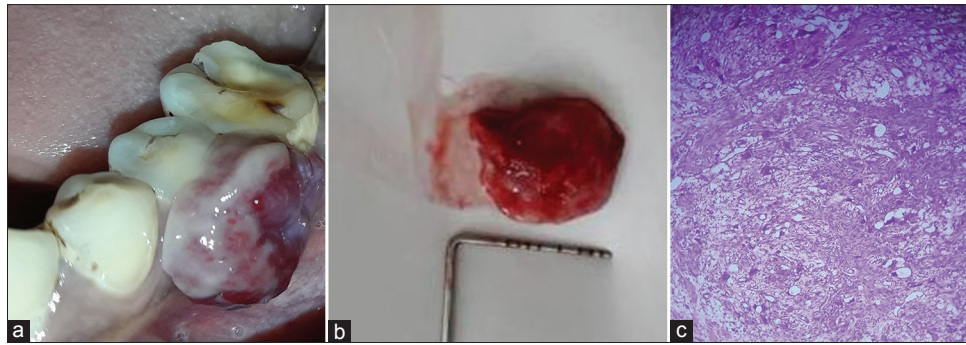


Figure 5: (a) Clinical presentation of peripheral giant cell granuloma. (b) Excised tissue. (c) Histopathological features suggestive of peripheral giant cell granuloma

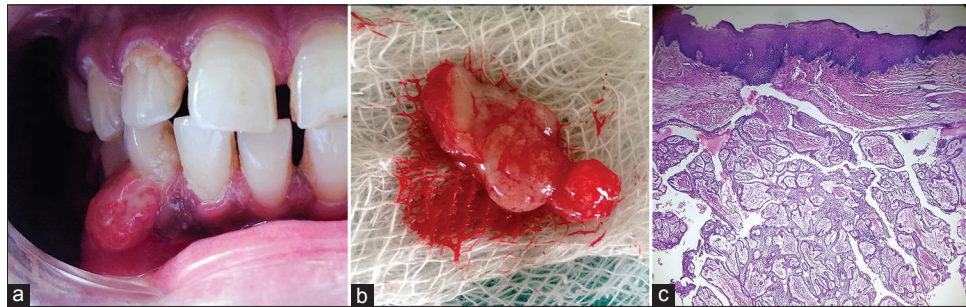


Figure 6: (a) Clinical presentation of peripheral ameloblastoma. (b) Excised tissue. (c) Histopathological features suggestive of peripheral ameloblastoma

to be an angiomatous lesion with numerous small endothelial-lined capillaries. Peripheral ossifying fibroma along with its clinical variants usually has fibroblastic reaction with variable calcification foci which might be irregular dystrophic calcification (peripheral fibroma with calcification) to cementicles (peripheral fibroma with cementification) and bone formation (peripheral fibroma with ossification).<sup>[2,7,8]</sup> Peripheral giant cell granuloma appeared to be vascular giant cell lesions.<sup>[2]</sup> Peripheral ameloblastoma is the rare, extrasosseous, odontogenic, soft-tissue tumor depicting bony erosion in some cases.<sup>[11]</sup> Periodic checkups and immunohistochemistry should be done to rule out basal cell carcinoma. All of the lesions discussed above usually do not produce significant radiographic changes as depicted in these case reports except in long-standing cases of peripheral ossifying fibroma and/or peripheral ameloblastoma rarely peripheral giant cell granuloma. These lesions must be managed effectively to reduce the recurrence propensity, especially for peripheral giant cell granuloma.<sup>[2,3]</sup> However, these lesions should be excised thoroughly with the special effort for obtaining primary closure of the surgical site so as to facilitate healing and discouraging proliferative granulation tissue formation which heralds early recurrence.<sup>[2,3]</sup>

The differential diagnosis should include peripheral fibroma, pyogenic granuloma, peripheral ossifying fibroma, hyperplastic gingival inflammation, hemangioma, metastatic cancer and angiosarcoma, and odontogenic myxoma.<sup>[4,6,12]</sup> Although pyogenic granuloma may vary in texture and duration from soft to firm and could be

suggestive of fibroma, even fibroma with calcification in long-standing cases.<sup>[6,12]</sup> However, pyogenic granuloma is mostly encountered among pregnant patients exclusively in the gingiva.<sup>[4,6]</sup> The metastatic tumors of the oral region are uncommon; the attached gingiva is the most commonly affected soft tissue site followed by the tongue.<sup>[3,4,6]</sup> Sometimes, hemangioma may mimic gingival growth, so it is necessary to distinguish it from the other lesions.<sup>[6]</sup> Diascopy might be helpful in such cases. Therefore, careful clinical evaluation and histopathology would be necessary to effectively manage these lesions.

## Conclusion

Although most of the gingival overgrowths represent the reactive hyperplasia to dental plaque except for peripheral ameloblastoma, biopsy is necessary in every case for achieving confirmatory diagnosis and making definite management protocol.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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### Conflicts of interest

There are no conflicts of interest.

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