

## International Journal of Dental Science and Innovative Research (IJDSIR) **IJDSIR** : Dental Publication Service Available Online at:www.ijdsir.com Volume – 8, Issue – 1, January – 2025, Page No. : 165 - 172 Unraveling Localized Oral Soft Tissue Overgrowths: Insights from Case Series and Literature Review <sup>1</sup>Dr. Pavithra G, Department of Oral Medicine and Radiology, KAHER's KLE Vishwanath Katti Institute of Dental Sciences, Belagavi, Karnataka, India <sup>2</sup>Dr. Zameera Naik, Department of Oral Medicine and Radiology, KAHER's KLE Vishwanath Katti Institute of Dental Sciences, Belagavi, Karnataka, India <sup>3</sup>Dr. Vaishali Keluskar, Department of Oral Medicine and Radiology, KAHER's KLE Vishwanath Katti Institute of Dental Sciences, Belagavi, Karnataka, India <sup>4</sup>Dr. Daneshwari Koshti, Department of Oral Medicine and Radiology, KAHER's KLE Vishwanath Katti Institute of Dental Sciences, Belagavi, Karnataka, India <sup>5</sup>Dr. Arati Neeli, Department of Oral and Maxillofacial Surgery, KAHER's KLE Vishwanath Katti Institute of Dental Sciences, Belagavi, Karnataka, India <sup>6</sup>Dr. Shreya M Ajarekar, Department of Oral Medicine and Radiology, KAHER's KLE Vishwanath Katti Institute of Dental Sciences, Belagavi, Karnataka, India Corresponding Author: Dr. Zameera Naik, Department of Oral Medicine and Radiology, KAHER's KLE Vishwanath Katti Institute of Dental Sciences, Belagavi, Karnataka, India Citation of this Article: Dr. Pavithra G, Dr. Zameera Naik, Dr. Vaishali Keluskar, Dr. Daneshwari Koshti, Dr. Arati Neeli, Dr. Shreya M Ajarekar, "Unraveling Localized Oral Soft Tissue Overgrowths: Insights from Case Series and Literature Review", IJDSIR- January – 2025, Volume – 8, Issue – 1, P. No. 165 – 172. Copyright: © 2025, Dr. Zameera Naik, et al. This is an open access journal and article distributed under the terms of the creative common's attribution non-commercial License. Which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given, and the new creations are licensed under the identical terms.

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### Abstract

Localized oral soft tissue overgrowths, often presenting as various reactive or neoplastic lesions, are common findings in dental practice. Accurate diagnosis is essential to differentiate these benign lesions from more ominous pathological entities. This article presents a diagnostic case series focusing on different types of localized oral soft tissue overgrowths, including fibromas, pyogenic granulomas, peripheral giant cell granulomas, fibro myxoma, and inflammatory fibro epithelial hyperplasia. Each case was analyzed in terms of clinical presentation, radiographic features, clinical differential diagnosis, histopathological features, and treatment outcomes. Additionally, a comprehensive review of the literature is provided to contextualize these findings within the broader spectrum of oral diagnosis. This case series underscores the importance of clinical vigilance, the role of biopsy in definitive diagnosis and highlights the nuances in managing these lesions. This case series also contributes to the existing body of

knowledge, offering insights that can guide clinicians in the effective diagnosis and management of similar cases in practice to decrease their likelihood of reoccurrence. **Keywords:** fibro myxoma, reactive lesion, pyogenic granuloma, peripheral ossifying fibroma, fibroma

#### Introduction

Localized oral soft tissue overgrowths, often referred to as focal reactive overgrowths (FROGs), represent a diverse group of lesions frequently occurring in the oral cavity. These lesions include focal fibrous hyperplasia, peripheral ossifying fibroma, pyogenic granuloma and peripheral giant cell granuloma.<sup>1</sup> Chronic irritation or trauma is commonly identified as the causative factor for these growths, which can develop up to several centimeters in diameter and may present as either pedunculated or sessile masses on the gingiva or buccal mucosa.<sup>1,2</sup>

The prevalence and distribution of these lesions have been the subject of various studies. For instance, a retrospective study conducted over ten years identified 449 cases of FROGs out of 2849 oral lesions, with focal fibrous hyperplasia being the most prevalent.<sup>1</sup> These lesions predominantly affect individuals between the ages of 21 to 40 years, with a higher incidence among females, and are most commonly reported on the right buccal mucosa.<sup>1</sup> Another case series highlighted that, these lesions are often asymptomatic, with patients seeking treatment primarily due to functional discomfort.<sup>3</sup>

Histopathological examination remains the gold standard for diagnosing these lesions, and surgical excision is the preferred treatment modality. The severity of the lesion determines the extent of excision, as some tend to recur.<sup>3,4</sup> Minimally invasive techniques, such as diode laser excision, have also been explored for managing these overgrowths, offering advantages like reduced bleeding and minimal postoperative complications.

This article aims to present a diagnostic case series of localized benign oral soft tissue overgrowths along with a comprehensive review of literature. By presenting the clinical, radiological, histopathological and treatment aspects of these lesions, this article highlights the understanding and management of these common yet diverse oral pathologies.

#### **Case series**

Patients reporting to the Oral Medicine and Radiology department of a Dental Institute, each presenting with distinct soft tissue growth in the oral cavity, persisting for varied durations. Medical history was recorded before the investigations and was found to be noncontributory. Examination revealed solitary, isolated growths in different areas of the maxilla and mandible in all the patients [Figures 1-6]. Details of the cases are summarized in Table 1.

The soft tissue overgrowths were surgically excised using full-thickness mucoperiosteal flaps. affected areas were meticulously debrided and sutures were placed after achieving optimal hemostasis. The excised tissues were sent for biopsy, leading to a diverse range of diagnosis, including pyogenic granuloma, fibromyxoma, peripheral cemento-ossifying fibroma, peripheral giant cell granuloma, giant cell fibroma, and inflammatory fibroepithelial hyperplasia. All patients were scheduled for periodic checkups, with no recurrences reported till date.

# Table 1: Clinical presentation of cases

Chief complaint of	Clinical and radiological	Management	Histopathological features	Diagnosis	Postoperative
the patient	characteristic features				instructions
A female patient aged	A solitary, pedunculated,	Surgical excision of	The presence of deep	Fibro	Periodic
41 years reported with	normal-colored, soft, non-	the mass was carried	connective tissue stroma	myxoma	checkups and
a complaint of	tender gingival growth was	out followed by	comprised of numerous small	(fig 1 a-c)	oral hygiene
swelling in the left	noted in 36 region. Radiology	debridement and	thick bundles of collagen		maintenance
lower jaw since 2	revealed no abnormal bony	biopsy	fibers with spindle-shaped		
months	characteristics		fibroblast surrounded by		
			loose myxomatous stroma		
			along with lymphocytes		
A female patient aged	A solitary, reddish-pink, sessile,	Surgical excision of	The presence of numerous	Pyogenic	Periodic
58 years reported with	firm gingival growth, which	the growth was	endothelium-lined channels	granuloma	checkups and
a complaint of	bled upon provocation, was	performed carefully,	engorged with the blood	(fig 2 a-c)	oral hygiene
swelling and bleeding	observed in the interdental area	with precautions	vessels were noted within the		maintenance
from gums in the	of the 11-21 region. Radiograph	taken to control the	connective tissue stroma		
upper front tooth	revealed no interproximal bone	bleeding. The excised	along with lymphocytes		
region since 3 months	loss	growth was sent for			
		biopsy.			
A male patient aged	A solitary, reddish pink, firm,	Surgical excision of	The presence of fibrous	Peripheral	Periodic
18 years reported with	non-tender sessile, growth was	the mass was carried	proliferation within the	cemento-	checkups and
the gum swelling in	noticed in 23,24region,	out after full-	connective tissue stroma was	ossifying	near date
the upper front jaw	involving the palatal mucosa.	thickness	noted along with cementum-	fibroma	follow-up
region on left side	The growth was found to	mucoperiosteal flap	like calcification	(fig 3 a-c)	visit due to
since 6 months	displace canine (23) buccally.	elevation followed by			high chances
	Radiograph revealed tiny	debridement. The			of recurrence
	radiopaque foci within the soft	excised mass was sent			
	tissue mass.	for biopsy			
A male patient aged	A solitary, normal-colored,	A surgical excision of	The presence of numerous	Giant cell	Periodic
45 years reported with	firm, pedunculated, non-tender	the mass was carried	stellate-shaped fibroblast and	fibroma	checkups and
a complaint of	growth was noted in 28 region.	out followed by	connective tissue stroma	(fig 4 a-c)	oral hygiene
swelling in the left	Radiograph revealed no	debridement and sent	consisting of thick bundle-		maintenance
upper jaw region	abnormal characteristics.	for biopsy	shaped collagen fibres and		
since18 months			plump fibroblast		
A male patient aged	A solitary, pinkish-white, firm,	Surgical excision of	The presence of	Inflammat	Periodic
32 years reported with	sessile, non-tender growth was	the mass was carried	pseudoepitheliomatous	ory	checkups and
a complaint of	noted in 28 region. Radiograph	out followed by	hyperplasia and juxta	fibroepith	oral hygiene
swelling in the left	revealed no abnormal	debridement and sent	epithelial inflammatory cell	elial	maintenance
upper jaw region	characteristics	for biopsy	infiltrate and haphazardly	hyperplasi	
since 18 months			arranged collagen fibers in	a (fig 5 a-	
			connective tissue stroma	c)	

A male patient aged	A solitary, pinkish-white, firm,	Surgical excision of	The presence of multinodular	Peripheral	Periodic
54 years reported with	sessile, non-tender growth was	the mass was carried	foci of mononuclear giant	giant cell	checkups and
a complaint of	noted in between 32,33 region.	out after full-	cells was noted within the	granuloma	near date
swelling in the lower	Radiograph revealed superficial	thickness	highly vascular stroma	(fig 6 a-c)	follow-up
front teeth region	bony erosion with peripheral	mucoperiosteal flap			visits due to
since 3 months	cuffing of the bone interdentally	elevation followed by			high chances
	between 32, 33 region	debridement. The			of recurrence
		excised mass was sent			
		for biopsy			





Figure 1: (a) Clinical presentation of fibromyxoma. (b)Histopathological features suggestive of fibro myxoma.(c) radiographic feature of excised lesion (post operative) shows no calcification





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





Figure 3: (a) Clinical presentation of peripheral cementoossifying fibroma. (b) Radiograph reveals presence of radiopaque foci. (c) Histopathological features suggestive of peripheral cemento-ossifying fibroma





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Figure 4: (a) Clinical presentation of giant cell fibroma.(b) Histopathological features suggestive of giant cell fibroma.(c) Post operative image shows healing was satisfactory.





Figure 5: (a) Clinical presentation of inflammatory fibro epithelial hyperplasia. (b) Radiographic features. (c) Histopathological features suggestive of inflammatory fibro epithelial hyperplasia



Figure 6: (a) Clinical presentation of peripheral giant cell granuloma. (b) Radiograph revealed cuffing of bone noted between 32,33. (c) Histopathological features suggestive of peripheral giant cell granuloma

#### Discussion

Localized soft tissue overgrowths in the oral cavity are common in dental practice, presenting as nodules, masses, or swellings. These occur due to factors such as chronic irritation, trauma, inflammation, hormonal changes, or unknown causes. Although typically nonmalignant, they may sometimes resemble malignant conditions, requiring accurate diagnosis and proper management.<sup>6</sup>

Benign soft tissue pathologies make upto 30–40% of oral lesions in clinical practice, which are often reactive or inflammatory in origin. Commonly, they include pyogenic granuloma, inflammatory hyperplasia, and various fibromas.<sup>7</sup>

Pyogenic granulomas (PG) are common, especially in young adults and pregnant women, due to hormonal factors. They account for 37% of gingival reactive lesions, with a mean patient age of 30.4 years and a female-to-male ratio of 1:1.5. These rapidly growing, red to purple lesions bleed easily and arise from trauma or irritation. Histologically, they show highly vascular proliferative tissue resembling granulation tissue, often requiring excision.<sup>8,9</sup> A case of PG was reported in a 58-year-old patient, which was above the mean age, presented as a smooth, inflamed, pedunculated gingival lesion which revealed bleeding on probing. Local deposits were observed adjacent to the lesion.

Peripheral ossifying fibroma (POF) is a reactive gingival lesion originating from periodontal ligament cells, primarily affecting females in their second decade. It commonly occurs in the maxillary region, with 60% of cases anterior to molars. POF appears as a firm, welldemarcated mass with histological features of cellular connective tissue and focal calcifications, resembling mature or immature bone. Recurrence rates after treatment range from 8.9% to 20%.<sup>10,11</sup> A case of POF was reported in 18 years old male patient with similar clinical features.

Giant cell fibroma (GCF), accounting for 2–5% of fibrous lesions and 0.4–1% of oral biopsies, was first described by Weathers and Callihan in 1947. It features large stellate-shaped multinucleated fibroblasts near the epithelium and is not linked to chronic irritation. GCF

primarily affects individuals in their third decade, with a slight female predilection, and most commonly occurs on the gingiva, more often in the mandible than the maxilla.<sup>12</sup> A case of GCF was documented in a 45-year-old male patient, affecting the maxilla and exhibiting similar characteristics.

Fibrous hyperplasia, or irritation fibroma, is a common localized overgrowth caused by chronic irritation, leading to a fibrotic reaction. Histologically, it consists of dense fibrous connective tissue with minimal vascularization and appears clinically as smooth, firm, pink nodules. It accounts for 1%–15% of oral lesions, with 90% of cases occurring in individuals over 19 years old. These lesions are non-neoplastic, presenting as localized inflammatory hyperplastic papules. <sup>13,14</sup> A 32year-old male patient presented to our OPD with similar findings, which were diagnosed as inflammatory fibroepithelial hyperplasia.

Peripheral giant cell granulomas (PGCG) are soft tissue lesions found on the gingiva or alveolar ridge, often linked to trauma or irritation. They account for 5–7% of soft tissue overgrowths and feature multinucleated giant cells within fibrous connective tissue. Unlike central giant cell granulomas, PGCGs are peripheral and appear as bluish-purple masses. If untreated, they may cause superficial erosion or cupping of the underlying alveolar bone.<sup>15</sup> A case of PGCG was documented in a 54-yearold male patient in the anterior mandible region, displaying a normal color and other similar characteristics.

Fibro myxoma is a rare benign myxoid tumor primarily affecting the jawbones, especially the mandible. Characterized by a gelatinous, mucoid stroma, it typically occurs in young adults aged 20–30. Often asymptomatic, it is frequently discovered incidentally on radiographic imaging. <sup>16,17</sup> A case of Fibro myxoma was

reported in a 47-year-old female patient, presenting in the gingiva of the mandible as a soft, non-tender lesion on palpation, with no radiographic abnormalities detected.

The differential diagnosis includes peripheral fibroma, pyogenic granuloma, peripheral ossifying fibroma, hyperplastic gingival inflammation, hemangioma, metastatic cancer and angiosarcoma, and odontogenic myxoma.

The consistency of PG ranges from soft to firm and can be differentiated from fibroma based on duration. Peripheral odontogenic or ossifying fibroma, appears lighter in color, on the gingiva with low vascularity, and is common in pregnant women. Metastatic oral tumors, are rare but often occur on attached gingiva and may be the first sign of a metastatic tumour, with a microscopic appearance resembling the primary tumor. Hemangioma, a developmental disorder, resembles PG in appearance. Diascopy confirms a diagnosis of Hemangioma or lesions of vascular origin by showing blood evacuation under pressure.

Management of localized oral soft tissue overgrowths typically involves surgical excision and addressing underlying causes like irritation or poor oral hygiene. For lesions with high recurrence, such as pyogenic granulomas and peripheral ossifying fibromas, laser therapy or corticosteroid injections may help reduce recurrence.<sup>18</sup> Regular follow-up is crucial to monitor recurrence and manage any residual symptoms or complications.

Fibromas have a low recurrence rate after complete excision, while peripheral ossifying fibromas and pyogenic granulomas have higher rates due to vascularity and hormonal influences, with recurrence reported at 10-20%. Complete excision and follow-up are crucial.<sup>19</sup>

## Conclusion

Accurate diagnosis and management of benign oral soft demand tissue overgrowths а comprehensive understanding of their clinical, histological, and pathological characteristics. These lesions, ranging from pyogenic granuloma to various fibroma variants, share overlapping features yet require distinct treatment approaches. Clinical success relies on careful differentiation between various pathological entities with a thorough clinical examination and use of appropriate diagnostic techniques. Regular monitoring, proper follow-up care, and elimination of contributing factors are critical elements in preventing recurrence and ensuring long-term treatment success.

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