

Surgical Management of Localized Gingival Overgrowth – Case Series

Dr. Saurav Shankar Das¹

Post Graduate

Department of Periodontology, AJIDS

Dr. Nandini N. Krishnamurthy²

Head of Department,

Department of Periodontology, AJIDS

Dr. Nagarathna DV³

Professor

Department of Periodontology, AJIDS

Dr. Parimala⁴

Reader

Department of Periodontology, AJIDS

Dr. Shamila Shetty⁵

Reader

Department of Periodontology, AJIDS

Dr. Riolla Sanchia Dsouza⁶

Post Graduate

Department of Periodontology, AJIDS

Abstract:- In dentistry, gingival enlargement are frequently encountered. To determine the most effective treatment, accurately identifying the underlying cause is crucial. Inflammation triggered by plaque buildup is the leading cause of gingival enlargement. This typically affects the interdental papillae and can be localized or generalized. Hormonal fluctuations, such as those occurring during puberty and pregnancy, can exaggerate gingival enlargement. Additionally, certain systemic medications can contribute to this condition. Successful treatment of gingival enlargement hinges on a four-pronged approach: accurately identifying the cause, improving oral hygiene practices, addressing any aesthetic concerns, and potentially surgical removal of excess tissue.

Keywords:- *Gingival Overgrowth, Gingiva, Fibroma, Capillary Hemangioma, Pyogenic Granuloma, Gingivectomy.*

I. INTRODUCTION

Localized gingival overgrowth is the technical term for an enlargement of gum tissue in a specific area. This can happen due to various triggers and interactions between the body (host) and its environment. The exact cause remains unclear, but potential contributors include dental problems like cavities, plaque buildup, tartar (calculus), poorly fitted fillings, stuck food particles or toothbrush bristles, hormonal changes, and side effects of certain medications. ^[1] These enlarged gum areas can cause problems with speaking clearly, chewing food effectively, teeth eruption, aesthetics, and even maintaining a regular oral hygiene routine. ^[2]

These growths often share similar characteristics. They may appear as either attached directly to the tissue (sessile) or nodule on a stalk (pedunculated). The color can vary from pale pink to erythematous, and they can come in different sizes. The lesions can be located in interdental papilla, palatal

area, marginal, or attached gingiva. These growths are usually painless, but they might bleed when stimulated by digital pressure, especially when using floss or other aids between the teeth. ^[3]

A treatment protocol consisting of nonsurgical periodontal treatment (NSPT) followed by surgical excision of lesion was performed for the patients. The specimens were then sent for histopathological analysis.

The case series describes varied etiology and clinical presentation of three different cases of localized gingival overgrowth. Treatment protocol included NSPT followed by surgical excision with histopathological assessment.

II. CASE 1 : TRAUMATIC FIBROMA

A 16 year male patient with Down's Syndrome came to the outpatient department with a chief complaint of swelling in upper front tooth region for 15 days. The lesion was first noticed 15 days ago and noticed gradual increase. No history of bleeding, except on digital pressure and use of interdental aids.



Fig 1 Intra – Oral Photograph of the Lesion

On examination a gingival overgrowth of 1x1 mm in size, sessile, erythematous and firm in consistency #13 was observed. The lesion appeared vascular and erythematous.

After visual and radiographic examination patient was diagnosed with grade I gingival overgrowth #13.

A treatment protocol included phase I therapy which consisted of, scaling and root planning (SRP) and oral hygiene instructions. surgical excision of the lesion was carried out one week after SRP. Patient was on standard follow up protocol. No recurrence was observed at 6 months follow up.



Fig 2 Pre-Operative



Fig 3 Immediate Post-op

Since the lesion did not regress completely post seven days of NSPT, surgical excision [figure 3] followed by gingivectomy was performed in the area. Biopsy specimen [figure 4] was sent for histopathological analysis.

The patient received anti-inflammatory drugs for 3 days and mouthwash for 7 days. The healing process after the surgery was uneventful.

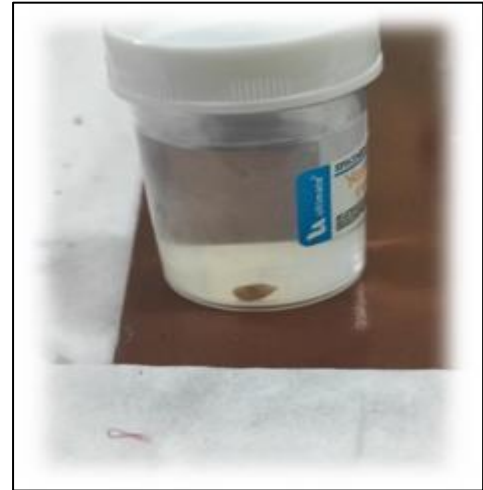


Fig 4 Biopsy Specimen

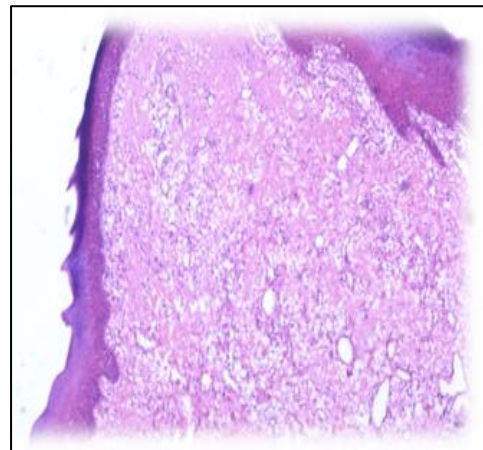


Fig 5 Histopathological Analysis



Fig 6 Post – Operative 14 Days

A histopathological evaluation revealed the lesion to be a "traumatic fibroma". After a 6-month follow-up, there were no signs of recurrence.

III. CASE 2 : HEALING PYOGENIC GRANULOMA

A female patient aged 26 years came to the OPD with a chief complaint of swelling in lower front tooth region since 1 month. The patient gave a history of a bleeding gingival growth since a year that was surgically removed. A new growth slowly developed, causing her discomfort and bleeding, especially while eating and brushing, as it grew towards the occlusal surface of her teeth. She confirmed she wasn't pregnant and wasn't undergoing any hormonal treatments.

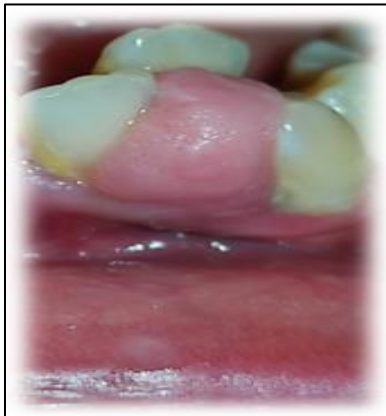


Fig 7 Intra – Oral Photograph of the Lesion.

On examination a gingival overgrowth of (3x3 mm in size) was observed. The growth covered the labial surface of the clinical crown #31 #32, it was firm, lobulated, rugged texture and bleeding upon stimulus.

After visual and radiographic examination patient was diagnosed with chronic generalized gingivitis and grade III gingival overgrowth #31 #32

A treatment plan was developed to address the existing inflammation and remove the overgrowth by NSPT including oral hygiene instructions. This involved scaling and root planning, and surgical excision of the growth one week after the SRP. There were no signs of the growth recurrence after a 6-month follow-up.



Fig 8 Preoperative Images of the Lesion in Labial 8(a)(b), Lateral(c) and Occlusal(d) Aspect

Following 1 week after NSPT, surgical excision [figure 9] followed by gingivectomy [figure 10] with the help of 15c blade was performed in the area. Biopsy specimen [figure 11] was sent for histopathological analysis.



Fig 9 Intra-Operative

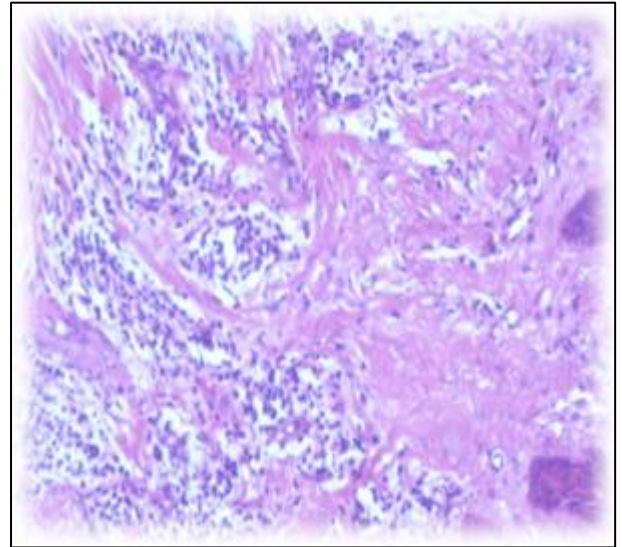


Fig 12 Histopathological Analysis

The patient was on anti-inflammatory drugs for 3 days and mouthwash for 7 days. healing was uneventful after the surgery.

A histopathological evaluation revealed the growth to be a "healing pyogenic granuloma". There were no signs of recurrence after being monitored for 6 months.



Fig10 Immediate Post-Op



Fig 13 Post – Operative 28 Days



Fig 11 Biopsy Specimen

IV. CASE 3 : CAPILLARY HEMANGIOMA

A female patient aged 29 years came to the OPD with a chief complaint of swelling in upper left back tooth region since 20 days. The lesion was first noticed 20 days ago and the size gradually increased. History of bleeding on having food and use of interdental aids. Patient was in her second trimester of pregnancy.



Fig 14 Intra – Oral Photograph of the Lesion.

3x4 mm in size, approximately covering two third of the clinical crown of #26. Lesion was firm, lobulated and bleeding upon stimulus.

After visual and radiographic examination patient was diagnosed with chronic generalized gingivitis and grade I gingival overgrowth #31 #32 a treatment plan was designed resolve the existing inflammation and remove the growth. This involved explaining proper oral hygiene, NSPT (scaling and root planning), and surgical excision of the growth one week after the SRP. There were no signs of the recurrence of the lesion after a 6-month follow-up.

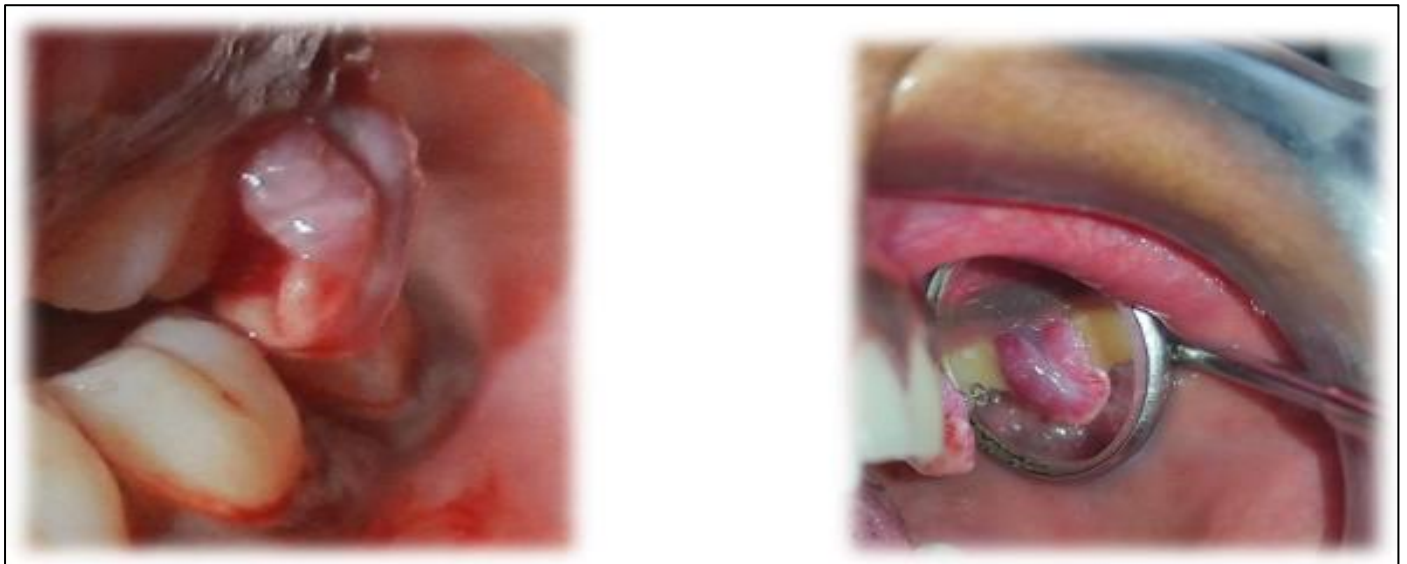


Fig 15 Pre Operative Images of the Lesion

Following 1 week after NSPT, surgical excision [figure 16] followed by gingivectomy with the help of 15c blade was performed in the area. Biopsy specimen was sent for histopathological analysis.



Fig 16 Immediate Post-Op

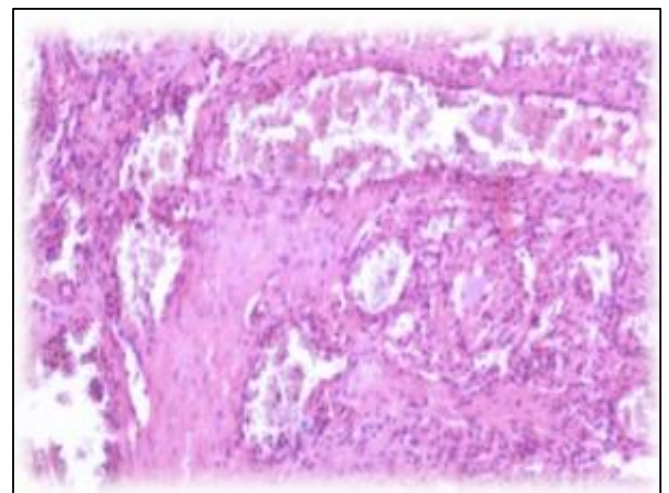


Fig 17 Histopathological Analysis

The patient was on anti-inflammatory drugs for 3 days and a mouthwash for 7 days. healing after surgery was uneventful.

The lesion was diagnosed as “capillary hemangioma” in histopathological evaluation . No recurrence was observed over a follow-up period of 6 months



Fig 18 Post – Operative 14 Days

V. DISCUSSION

Localized gingival overgrowths, also known as reactive gingival hyperplasia, occur when the gingiva is enlarge in response to local irritations. Gingival overgrowth can occur due to two main factors: plaque-induced or non-plaque-induced.^[4]; however, often, a more specific primary etiology can be identified. There are different etiologies for gingival overgrowth. Etiologies of gingival overgrowth are inflammatory enlargement, drug-induced enlargement associated with systemic diseases, neoplastic enlargement, and false enlargement^[5].

Inflammatory or traumatic swelling of the gums can result from factors such as sharp tooth points, plaque buildup, dentures, or dental prostheses^[6]. This condition may cause discomfort, and it often recurs due to issues like poorly fitting dental restorations, foreign objects, habitual biting, or sharp tooth edges.

Total surgical removal and excision of the source are the preferable treatments for traumatic fibroma and all reactive hyperplasia^[7]. The recurrence rate for pyogenic granuloma is said to be 16% of the treated lesions and so re-excision of such lesions might be necessary^[8].

Although various techniques, such as scalpel biopsy, punch biopsy, electrocautery and lasers, are available for obtaining biopsy tissue samples. Scalpel biopsy is probably the best preferred technique as others have their drawbacks.

A biopsy can be incisional or excisional. Incisional biopsy samples only a portion of the lesion, and is most appropriate for large lesions where complete surgical removal is impractical. Excisional biopsy involves complete removal

of the lesional tissue. This is most appropriate for small lesions that are easily accessible to surgery. Following biopsy, the excised material needs to be fixed to stop autolysis, and the solution of choice is 10% neutral buffered formalin.

VI. CONCLUSION

Effective management of localized gingival overgrowth relies heavily on meticulous plaque control. Surgical intervention, if necessary, requires careful technique selection after lesion removal. Additionally, robust patient maintenance strategies are crucial to prevent regrowth. This case series highlights the importance of comprehensive patient history and clinical evaluation in guiding treatment decisions for gingival enlargements.

REFERENCES

- [1]. Doufexi A, Mina M, Ioannidou E. Gingival overgrowth in children: Epidemiology, pathogenesis, and complications. A literature review. *J Periodontol.* 2005;76:3–10.
- [2]. Drăghici EC, Crăițoiu Ș, Mercuț V, Scricciu M, Popescu SM, Diaconu OA, et al. Local cause of gingival overgrowth. Clinical and histological study. *Rom J Morphol Embryol.* 2016;57:427–35.
- [3]. Agrawal AA. Gingival enlargements: Differential diagnosis and review of literature. *World J Clin Cases.* 2015;3:779–88.
- [4]. Lindhe J, Lang NP, Karring T. *Blackwell Munksgaard.* Oxford, UK: Blackwell; 2008. Clinical periodontology and implant dentistry.
- [5]. Development of a classification system for periodontal diseases and conditions. Armitage GC. *Ann Periodontol.* 1999;4:1–6.
- [6]. Irritation fibroma - a case report. Bagde H, Waghmare A, Savitha B, Vhanmane P. *Int J Clin Dent.* 2013;5:39–40
- [7]. Reactive lesions of the gingiva: diagnosis and treatment options. Rossmann JA. *Open J Pathol.* 2011;5:23–32.
- [8]. Jafarzadeh H, Sanatkhan M, Mohtasham N. Oral pyogenic granuloma: a review *J Oral Sci* 2006; 48(4): 167-75.