Surgical Management of Reactive Lesion of Gingiva: A Case Series

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Abstracts: Pyogenic granuloma is a reactive tumor-like lesion usually appears as localized solitary nodule with a sessile or pedunculated base and shows predilection for gingiva. Most commonly the line of treatment is the accurate excision as well as elimination of contributing factors considerably decreases recurrence probabilities. Here is the series of four cases of pyogenic granuloma on gingiva which were managed by excisional biopsy and were diagnosed as pyogenic granuloma after histopathological examination. [K Dave, Natl J Integr Res Med, 2018; 9(3):75-78]

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Introduction: Pyogenic granuloma is an inflammatory hyperplasia found in oral cavity and considered to be non neoplastic in nature.[1] The lesion was described by Hullihen[2] in 1844, but the term pyogenic granuloma/ granuloma pyogenicum was coined by Hertzell[3] in 1904.

The term pyogenic granuloma is a misnomer because the lesion does not contain pyogenic organisms and is not a true granuloma.[1] Etiological factors like local irritation, low grade or chronic irritation, inflammation, minor trauma, drugs, and may be due to hormonal conditioning factors, like lesions occurring in pregnancy and at puberty.[4] It most commonly occurs in young females in the second decade, due to a vascular effect of hormonal changes.[5] The most common intraoral site is the gingiva (approximately 75%), followed by lips, tongue, buccal mucosa, palate and floor of the mouth.[6] The lesion appears as an elevated, pedunculated or sessile mass with a smooth or lobulated surface. It is deep red or reddish-purple in color, and the surface may be ulcerated with tendency to bleed.

Final diagnosis of pyogenic granuloma is made by histological evaluation of specimen after excisional biopsy. Corrective intervention is surgical excision with thorough scaling and root planning and curettage of the adjacent teeth and root surfaces. Because pyogenic granulomas are rarely encapsulated, they can recur if surgical removal is incomplete[7]. Here present article shows a series of four cases where application of accurate excision technique as well as removal of contributory factors, considerably decreased probabilities of recurrence.

Case 1: A systemically healthy, 42 years old female patient reported to department with a chief complaint of swollen gum in front teeth region since 2-3 months. In past dental history patient had same type of lesion on same side before 1 year and had undergone surgical treatment for the same. On intraoral examination the lesion was present on the labial aspects of maxillary teeth spreading in the interdental area between 11 and 21 also covering 1/3rd of the facial aspect of 11. The lesion was nodular and manifested as red, erythmatous surface with sessile base. (FIG. 1 a,b).

Treatment: After completion of oral prophylaxis excision of the lesion was done under local anesthesia using a scalpel and blade, followed by curettage and through scaling of the involved teeth. Full thickness mucoperiosteal flap was elevated for complete debridement. (FIG.1 c). Post-operative excised tissue was sent for histopathological examination and sutures were taken (FIG.1 d.e). Patient was recalled after 1 week, 6 months and 1 and ½ year follow up was taken which was showing healthy tissue at treated area (FIG.1 f,g).

FIG 1 a) Preoperative view b) Incision c) Full thickness mucoperiosteal flap reflected d) Suture taken e) Excised tissue f) Postoperative view at 6 months g) 1 ½ year h) Histopathological view

Case 2: A 30 years old male patient reported to department with a chief complaint of swollen gum in front teeth region since 2 months. No significant medical and dental history.

On intraoral examination the lesion was present on the buccal aspects of maxillary teeth spreading in the interdental area between 25 and 26 (FIG. 2 a). The lesion was nodular, manifested as red, erythmatous surface with sessile base.

Treatment: After completion of oral prophylaxis surgical treatment was carried out same as described in case 1.((Fig 2 b,c,d,e) Patient was recalled after 1 week for follow up. After 1 and 6 months follow up was taken which was showing healthy tissue at treated area (FIG.2 f,g).

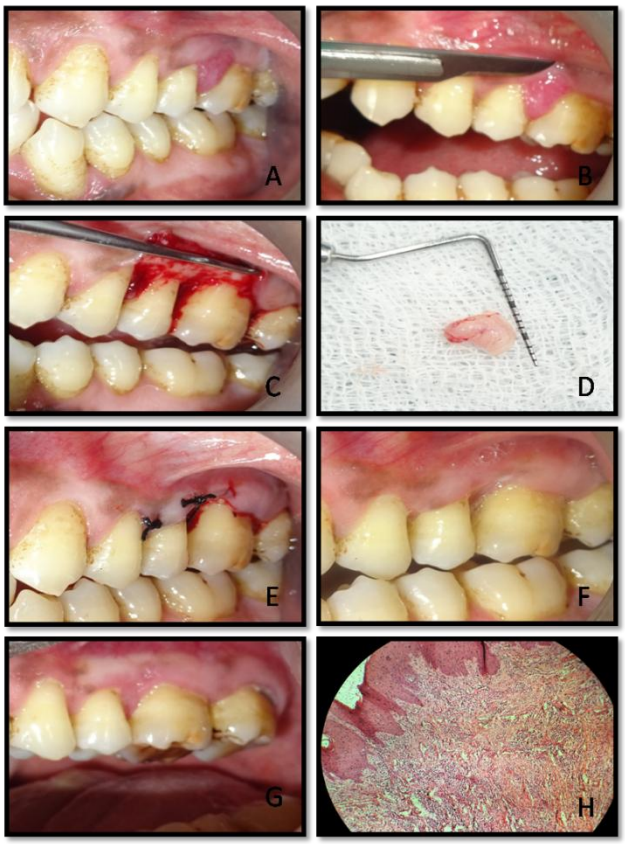

FIG 2 a) Preoperative view b) Incision c) Full thickness mucoperiosteal flap reflected d) Excised tissue e) Suture taken f) Postoperative view at 1 months & g) 6 months h) Histopathological view.

Case 3: A 31 years old male patient reported to department of periodontics with a chief complaint of bleeding from gums on the right upper back tooth side since 1 month. Medical history and the dental history was non contributory.

On intraoral examination the lesion was present on the baccal aspects maxillary teeth spreading in the interdental area between 15 and 16. The lesion was nodular, lobulated and manifested as red, erythmatous surface with sessile base. (FIG. 3 a)

Treatment: Oral prophylaxis was completed. Excision of the lesion was carried out under local anesthesia using a scalpel and blade, followed by curettage and through scaling of the involved teeth (FIG.3 b). Patient was recalled after 1 week for follow up. After 3 months follow up was taken which was showing healthy tissue at treated area (FIG.3 c)

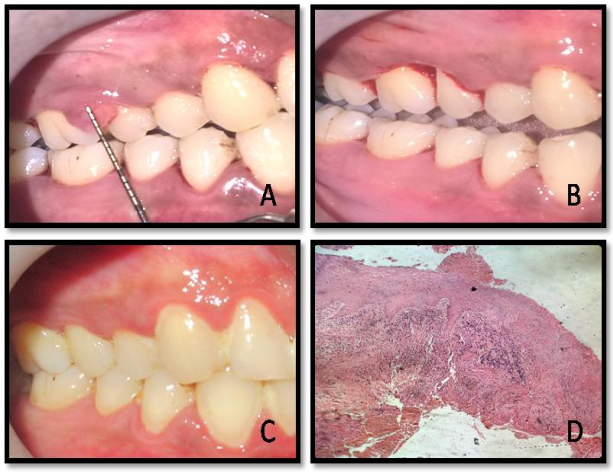

FIG 3 a) Preoperative view b) Excision done c) Postoperative view at 3 months d) Histopathological view

Case 4: A 22 years old male patient reported to department of periodontics with a chief complaint of bleeding gums in upper front teeth region since 15-20 days. Medical history and the dental history was non contributory.

On intraoral examination the lesion was present on the palatal aspects maxillary anterior teeth spreading in the interdental area between 11 and 12. The lesion was oval in shape nodular and ruff surface manifested as red, erythmatous surface. (FIG. 4 a)

Treatment: After completion of oral prophylaxis surgical treatment was carried out same as described in case 3. (FIG.4 b,c,d) Patient was recalled after 1 week for follow up. After 1 month follow up was taken which was showing healthy tissue at treated area. (FIG.4 e)

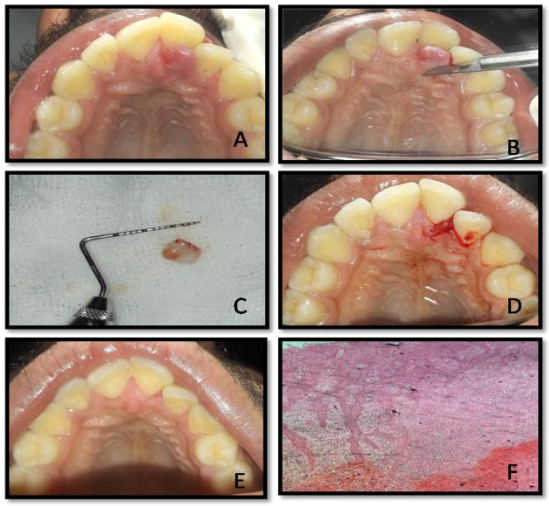

FIG 4 a) Preoperative view b) Incision c) Excised tissue d) Postoperative view e) Postoperative view at 1 month f) Histopathological view

Histological findings: H & E sections of all 4 cases showed parakeratinized stratified squamous epithelium which is hyperplastic at few places and at some areas showed ulceration. The underlying connective tissue shows bundles of collagen fibers arranged haphazardly, along with a mixed inflammatory cell infiltrate of neutrophils, plasma cells and lymphocytes. Few areas within the connective tissue show dense aggregates of inflammatory cells. The connective tissue at few places show plump fibroblastic activity, numerous endothelial cell lined blood vessels and areas of haemorrhages. Based on this, the diagnosis "Pyogenic Granuloma" was made. (Fig 1. h, Fig 2. h, Fig 3. d, Fig 4. f)

Discussion: Pyogenic granuloma is an inflammatory hyperplasia formed as a result of an exaggerated reaction of connective tissue to some localized minor lesion or any underlying irritation. Histologically, pyogenic granulomas are classified as the Lobular Capillary Heamangioma(LCH) type and the non-Lobular Capillary Heamangioma type.[5] The LCH type has proliferating blood vessels organized in lobular aggregates, no specific changes such as oedema, capillary dilation or inflammatory granulation were noted. The non-LCH type consisted of a vascular core resembling granulation tissue with foci of fibrous tissue. In the central area of the non- LCH pyogenic granuloma a greater number of vessels with perivascular mesenchymal cells non-reactive for alpha smooth muscle actin (SMA) is detected as compared with the lobular area of the LCH type pyogenic granuloma.

Although pyogenic granuloma may occur at any age, it is predominat in the second life. In contrast, our article reported the patient age between 30 to 40 years.[4] The maxillary region gingiva is frequently involved as compared to mandibular gingiva. Excision and biopsy of the lesion is the recommended line of treatment unless it would produce a marked deformity and in such a case incisional biopsy is recommended.[8] Excision of the gingival lesions up to the periosteum with through scaling and root planning of adjacent teeth to remove all visible sources of irritation and contributing factors is recommended.[1] Various other treatment modalities such as use of Nd: YAG laser, carbon dioxide laser, cryosurgery, electrodessication, sodium tetradecyl sulfate sclerotherapy [5] and use of intra lesional steroids have been used by various clinicians. Powel et al [9] reported the use of Nd:YAG laser for excision of pyogenic granuloma because of lower risk of bleeding as compared to other techniques and superior coagulation characterstics.

Incomplete excision, failure to remove etiologic factors or repeated trauma contributes to recurrence of these lesions.[1] Al-Khateeb et al. observed a recurrence rate of 5.8% in his study.[10] The present case 1 was followed up for a period of 1 and ½ year and no recurrence was observed.

Conclusion: Pyogenic granulomas are commonly encountered soft tissue lesions. Careful diagnosis is essential to differentiate this lesion from vascular lesions. Meticulous oral hygiene should be instituted. Surgical excision of the growth, along with curettage should be done to prevent recurrences of this common lesion.

References:

1. Neville BW, Damm DD, Allen CM, Bouquot JE. Oral and Maxillofacial Surgery. 2nd ed. Philadelphia: Saunders; 2002. p. 447-9.

2. Hullihen SP. Case of aneurism by anastomosis of the superior maxillae. Am J Dent Sci 1844; 4: 160-2.
3. Hartzell MB. Granuloma pyogenicum. J Cutan Dis Syph 1904; 22: 520-5.
4. Regezi AJ, Sciubba J. Clinical pathologic correlations. 2nd ed.Philadelphia: WB Saunders Co; 1985. p. 194–6.
5. Jafarzadeh H, Sanatkhani M, Mohtasham N. Oral pyogenic granuloma: A review. J Oral Sci 2006; 48: 167-75
6. Parisi E, Glick PH, Glick M. Recurrent intraoral pyogenic granuloma with satellitosis treated with corticosteroids. Oral Dis 2006; 12: 70-2.
7. Angelopoulos AP. Pyogenic granuloma of the oral cavity; statistical analysis of its clinical features. J Oral Surg. 1971; 29: 840-847.
8. Taira JW, Hill TL, Everett MA. Lobular capillary hemangioma (pyogenic granuloma) with satellitosis. J Am Acad Dermatol 1992; 27: 297-300.
9. Powell JL, Bailey CL, Coopland AT, Otis CN, Frank JL, Meyer I. Nd: YAG laser excision of a giant gingival pyogenic granuloma of pregnancy. Lasers Surg Med 1994; 14: 178-83.
10. Al-Khateeb T, Ababneh K. Oral Pyogenic granuloma in Jordanians: A retrospective analysis of 108 cases. J Oral Maxillofac Surg. 2003; 61: 1285–8.

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