Case Report

Evaluation of clinico-pathological reports and recurrence of 20 cases of localized gingival overgrowths

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Abstract:
The aim of the present study was to assess the clinico-histopathological picture and to examine the recurrence of various localized hyperplastic gingival growths after their surgical treatment. Twenty patients of localized hyperplastic gingival outgrowth were evaluated in the present clinico-histopathological study. The data regarding age, sex, location, size, and duration of lesion were summarized. After 4 weeks of initial therapy, an excision of the growth with conventional flap surgery was performed. The excised tissues were sent for histopathological analysis, and the lesions were reclassified into four groups. All the patients were recalled after 3 and 6 months to study the recurrence of the growth. Twenty lesions were inspected, the pyogenic granuloma was the most common (55%), followed by peripheral fibroma (25%), peripheral giant cell granuloma (15%), and calcifying fibroblastic fibroma (5%). Out of the twenty lesions evaluated, the pyogenic granuloma was the most common with no recurrence in any case.

Key words: Conventional flap surgery, localized hyperplastic gingival overgrowth, pyogenic granuloma

INTRODUCTION

Gingival mucosa is under constant irritation from masticatory forces, minor trauma, plaque, calculus, and iatrogenic factors. One of the types of gingival tissue reactions to these irritants is by developing a type of localized growth. These common localized gingival growths are nonspecific hyperplastic reaction due to inflammation and not due to neoplasia (Cooke, 1952).

The purpose of the present case series is to assess the clinico-histopathological picture and to examine the recurrence of various localized hyperplastic gingival growths after their surgical treatment.

CASE REPORT

Twenty patients who reported with localized hyperplastic gingival outgrowth in the outpatient department of periodontics, during the years 2010–2011, were included in the present study. The clinical data regarding age, sex, location, size, and duration of lesion were arranged along with the blood investigations (complete hemogram). Pregnant and lactating females, patients with known systemic diseases such as diabetes mellitus, hypertension, epilepsy, or organ transplantation, and smokers were excluded from the study. Before the initial therapy, the cases with isolated lesions and normal blood limits were only selected. After 4 weeks of initial therapy that included thorough subgingival scaling under local anesthesia to reduce the inflammatory component of the overgrowth, excision of the growth along its entire base with conventional flap surgery was performed. After degranulation of the tissues, interdental sutures were placed to close the wound. The surgical wound was covered by Coe-pak© and left in place about a week to facilitate quick healing [Figure 1a-d]. Amoxicillin was prescribed as a prophylactic drug to all the patients for 5 days in addition to nonsteroidal anti-inflammatory drugs and instructed to use chlorhexidine 0.2% twice daily as an antiplaque agent for 4 weeks. The excised tissues were sent in 10% formalin-containing bulb to the department of oral and maxillofacial pathology for histopathology. Histologic slides were made as 6-micron paraffin sections stained
with hematoxylin and eosin. All the slides were inspected histopathologically and the lesions were reclassified into four groups classified by Buchner (1977) using the following histopathological features.

**Pyogenic granuloma**
This group of lesion shows numerous proliferating endothelial cells lined in vascular spaces, in cellular connective tissue stroma. It shows dense chronic inflammatory cell infiltrate. The lesions are covered with stratified squamous epithelium of variable thickness and ulceration in some cases [Figure 2a].

**Fibrous hyperplasia**
This group of lesions is covered by a layer of keratinized squamous epithelium and consists of irregularly arranged bundles of collagen fibers and fibroblasts in varying proportions [Figure 2b].

**Peripheral giant cell granuloma**
This group of lesion consists of numerous multinucleated giant cells of variable size and shape in the cellular connective tissue stroma. Numerous capillaries grow in the lesion, particularly around its periphery. It is covered by keratinized squamous epithelium [Figure 2c].

**Calcifying fibroblastic fibroma**
It is nothing but the fibrous hyperplasia with calcification. It consists of cellular connective tissue stroma and foci of dystrophic calcification [Figure 2d].

All the patients were recalled after 3 and 6 months to study the recurrence of the growth.

To summarize, the main outcome measures investigated were the patients’ age, sex, location, size, duration of lesion, result of treatment, and histopathological diagnosis.

**RESULTS**

The chief complaint in most cases was painless swelling on gums. Other complaints included bleeding gums and bad breath. The duration of chief complaints ranged from 3 to 24 months (mean: 7 months). The majority of patients exhibited poor oral hygiene. All the lesions were described as soft to firm in consistency. The base was pedunculated in 80% of the cases and sessile in the remaining 20% of cases. Grossly, the pyogenic lesions were more often pedunculated than sessile and clinically they vary from deep red to pale pink. All the...
fibroma lesions were pedunculated and pink. Peripheral giant cell lesions were more often sessile and ranged from red to purplish in color [Figure 3a-d].

Out of the twenty lesions perused, the pyogenic granuloma was the most prevalent (55%), followed by peripheral fibroma (25%), peripheral giant cell granuloma (PGCG) (15%), and calcifying fibroblastic fibroma (5%) [Tables 1-4].

The period of follow-up ranged from 3 to 6 months postoperatively. About two-third of the patients did not keep their review appointments beyond a week and only seven patients came for review after 6 months. However, no recurrence was noted in any of these seven patients [Figure 4a-c and d].

**DISCUSSION**

The present study was done to evaluate the discrete nature of localized hyperplastic gingival lesions clinically and histopathologically in a series of twenty treated cases. Although the number of patients may be undersized to make any unblurred assertion about the age, sex, etc., we may presuppose that all the localized hyperplastic gingival growths affect people of all ages and both the sexes. The number of patients who came for a follow-up was only 7 out of 20, thus a small number to predict the recurrence of the lesion after surgery. Hence, we cannot correctly comment on the recurrence rate.

In the present study, pyogenic granuloma was found in all age groups with a mean age of 34 years. This finding was similar to that of 33 years reported by Angelopoulos et al. 1971 in a Nigerian population. In the present study, pyogenic granuloma was more common in males than females. This finding differs to what Angelopoulos, 1971, and Lowoyin, 1997, have reported.

Fibrous hyperplasia or fibroma was also found in similar age group as that of pyogenic granuloma, with a mean age of 39 years. It was like Darlington who also quoted the fourth decade. Buchner et al. in 1977 found a mean age of 39 years which was exactly similar to our study. Eversole et al. in 1972 and Feller et al. in 2004 observed that fibrous hyperplasia was more common in females, and this is confirmed by our study. In agreement with our findings, Cooke also found no marked differences regarding the location of fibroma in either jaw.

In the present study, PGCG was found more commonly in fourth decade with a mean age of 34.66 years and in females like what Giansanti and Waldron reported in 1969. Giansanti et al. in 1969, 1972 and Feller et al. in 1997, have reported.

In this case series, all the studied lesions were benign. Kfir et al. in 1980 has stated that excision is the treatment of choice for fibrous epulis and similar lesions. Al-Khateeb et al. in 2003 have stated that the recurrent lesions could be a result

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**Table 1: Distribution of the lesions according to sex and age**

| Age (years) | Total, n (%) | Male | Female |
|------------|--------------|------|--------|
| 10-20      | 2 (10)       | 1    | 1      |
| 20-30      | 4 (20)       | 1    | 3      |
| 30-40      | 6 (30)       | 2    | 4      |
| 40-50      | 5 (25)       | 3    | 2      |
| 50-60      | 2 (20)       | 1    | 1      |
| 60-70      | 1 (5)        | 1    | 0      |
| Total (%)  | 20 (100)     | 9 (45) | 11 (55) |

**Table 2: Age and sex distribution of individual lesion**

| Type of the lesion | Age of patients (range and mean) | Sex | Number of cases (%) |
|--------------------|----------------------------------|-----|---------------------|
|                     |                                  | Male | Female |
| Pyogenic granuloma  | 20-57 (34.72%)                   | 6    | 5                   |
| Peripheral fibroma  | 14-60 (39.2%)                    | 1    | 4                   |
| Peripheral giant cell granuloma | 30-42 (34.62%) | 1    | 2                   |
| Calcifying fibroblastic fibroma | 68 (68.00%) | 1    | 0                   |

**Table 3: Distribution of individual lesions in either jaw**

| Type of the lesion | Maxilla | Mandible |
|--------------------|---------|----------|
|                    | Anterior (%) | Posterior (%) | Both (%) | Anterior (%) | Posterior (%) | Both (%) |
| Pyogenic granuloma | 2 (18.18) | 1 (9.09) | 3 (27.27) | 5 (45.45) | 3 (27.27) | 8 (72.72) |
| Peripheral fibroma | 0       | 2 (40)  | 2 (40)   | 3 (60)   | 0         | 3 (60)   |
| Peripheral giant cell granuloma | 3 (100) | 0       | 3 (100)  | 0        | 0         | 0        |
| Calcifying fibroblastic fibroma | 0       | 1 (100) | 1 (100)  | 0        | 0         | 0        |
| Total              | 5 (55) | 4 (44.5) | 9        | 8        | 3         | 11       |

**Table 4: Size range of each lesion**

| Size range (cm) | Pyogenic granuloma (%) | Peripheral fibroma (%) | Peripheral giant cell granuloma (%) | Calcifying fibroblastic fibroma (%) |
|----------------|------------------------|------------------------|------------------------------------|------------------------------------|
| 0.5-1          | 5 (45.45)              | 3 (60)                 | 1 (33)                             | 0                                  |
| 1.1-1.5        | 4 (36.36)              | 1 (20)                 | 2 (66)                             | 0                                  |
| 1.6-2.0        | 2 (18.18)              | 1 (20)                 | 0                                  | 1 (100)                            |
| 20             | 11                     | 5                      | 03                                 | 1                                  |
of incomplete excision or treating such lesions by cautery or laser.\[12\]

Lawoyin et al 1997 have reported that lesions must be excised down till the underlying periosteum, and the predisposing irritants must be removed to avoid the possibility of recurrence.\[13\] Therefore, in the present case series report, all the lesions were treated by surgical excision followed by conventional flap surgery to ensure adequate excision of the lesion with its entire base.

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Conflicts of interest
There are no conflicts of interest.

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