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Case Report

Subgingival Closed Flap Curettage as an Essential Non-Surgical Procedure in Resolution of the Gingival Inflammation: A Case Report

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Abstract

Gingivitis is the most common infectious and inflammatory disease of the gingiva and can result in periodontitis if not treated on time. Non-surgical therapy in periodontics is the essential cornerstone therapy to resolve gingival inflammation and somehow to prevent the progression from gingivitis to periodontitis. Nonsurgical therapy includes scaling, root planning, and curettage. After scaling and root planning, curettage is needed, if the inflammation persists as the periodontal surgery is contraindicated in case of inflamed gingiva. Present case report is on a 42 years male patient who reported to the department of Periodontology with the chief complaint of swollen and bleeding gingiva of the canine region. This case was managed non surgically by a combination of scaling, root planning and curettage which resulted in the resolution of gingival inflammation and the restoration of the normal characteristic clinical features of gingiva.

Keywords: *Gingivitis; Curettage; Granulation Tissue; Canine*

Introduction

In the field of periodontology, two types of disease entity most commonly do exist. The first one is the gingivitis and the other one is the periodontitis. Gingivitis refers to the inflammation of the gingiva resulting in all signs and symptoms of gingivitis such as the bleeding on probing (first diagnostic sign of gingivitis), soft and oedematous consistency, rolled out and blunt contour, loss of stippling [1]. The major causative factor for the occurrence of the gingivitis is the presence of the plaque and calculus which in turn leads to all the classic signs of gingivitis [2].

Periodontitis is the consequence, when gingivitis not treated at an early stage. Periodontitis refers to the extension of the inflammation from gingiva into the supporting periodontal tissues resulting in the characteristic diagnostic features of periodontitis such as formation of periodontal pockets, clinical attachment loss, bone loss, gingival recession, and tooth mobility [3].

The treatment of either the gingivitis or periodontitis begins with the first phase of the periodontal therapy, i.e. the non-surgical phase or phase I therapy. The non-surgical phase of periodontal therapy consists of scaling, root planning, and curettage [4]. Scaling refers to the removal of the causative factors of gingivitis and periodontitis from the tooth surface i.e. plaque and calculus and this can be accomplished by means of either hand scaling, ultrasonic scaling, or a combination of both [5]. It is a proven fact from the previous studies that the

tooth root, exposed to the oral environment (gingival recession) becomes heavenly contaminated by the toxins released by the microbes. As a result of which it becomes mandate to free the root surface by these harmful toxins of bacteria and this can be accomplished by the procedure called as root planning [6].

Following scaling and root planning, in most of the clinical cases, the gingiva restores back to its normal clinical health; by the resolution of the inflammatory component of the gingiva. However sometimes, despite a good and a thorough scaling and root planning, patient still complains of swollen gums and the very little improvement in bleeding on probing. Hence in such cases, the curettage procedure, serves as the most important component of the non-surgical therapy as it gradually resolves the gingival inflammation and prevent the progression from gingivitis to periodontitis [7].

Curettage refers to the scraping of the soft tissue wall of the gingiva under local anaesthesia by means of the specialized set of the periodontal instruments, designed specifically for the curetting, and these are called as the Curettes; which are again of various types consisting of the universal curettes and the area specific curettes [8].

By scraping the soft tissue wall of the gingiva, there is a debridement of the gingival wall of the periodontal pocket and this debridement mainly consist of the removal of the irritants and the granulation tissue from the gingival wall of the periodontal pocket, because of which, there is the resolution of the inflammatory component of the gingiva and the restoration of the gingival health to its normal level [9].

Case Report

A 42 years male patient reported to the department of Periodontology with the chief complaint of swollen and bleeding gum w.r.t the lower right canine. The patient was systemically health and had undergone extraction of his lateral incisor and central incisor 5 - 6 years back.

Upon extraoral examination, the patient was facially symmetrical, lymph nodes were non palpable, and no clicking or popping sounds were detected upon TMJ examination. Upon intraoral examination, no gross abnormality was detected on the buccal mucosa, labial mucosa, palate, and tongue. Upon gingival examination w.r.t mandibular right canine, the gingival inflammation was present with the following characteristic clinical features:

A. Colour: Bluish red with the inflammatory component dominant over the bluish component.
B. Consistency: Soft and oedematous.
C. Contour: Rolled out and blunt.
D. Surface texture: Stippling absent.
E. Position of gingiva: Apical to cementoenamel junction.

Hence upon the clinical examination of gingiva, a diagnosis of chronic generalized gingivitis with localized periodontitis with respect to mandibular right canine was made and the phase I therapy was started which consist of scaling and root planning. Following scaling and root planning, the patient was put on an oral hygiene regimen and the patient was recalled after 1 week as a part of the revaluation phase.

The patient came back for revaluation after 1 week. Upon asking the patient that is he found any relief from the previous treatment, the patient replied, that he still feels pain and swelling over the gingiva of the lower right canine.

Upon revaluating, it was found that the inflammatory component of the gingiva is persisting and still the consistency is soft and oedematous. Hence by revaluating the clinical condition of the gingiva, it was decided to do curettage procedure under local anaesthesia with respect to right mandibular canine, and the patient was convinced for this procedure.

Hence the curettage procedure under local anaesthesia was started with the Universal Columbia curette by scraping the soft tissue wall of the gingival pocket and a thorough removal of irritants and the granulation tissue followed by the gentle control of the localized bleeding. The patient was given following post procedure instructions:

1. Not to spit out for 45 minutes.
2. Lukewarm water saline rinses after 24 hours to control post procedure intraoperative swelling.
3. Gentle intermittent cold compression with ice pack in case of extraoral swelling.
4. A combination of analgesic and anti-inflammatory tablet was prescribed.
5. Patient was advised for the topical application of an antibiotic contains gel and a mouthwash along with soft toothbrush for gentle cleaning of the concerned tooth.
6. Patient was instructed to come for follow up after 1 week.

Upon follow up after 1 week of the patient, the following changes were noted in the gingiva of the right mandibular canine:

A. Colour: Pale pink.
B. Consistency: Firm and resilient.
C. Contour: Scalloped and knife edge.
D. Surface texture: Appearance of stippling.
E. Position of gingiva: Apical to cementoenamel junction.

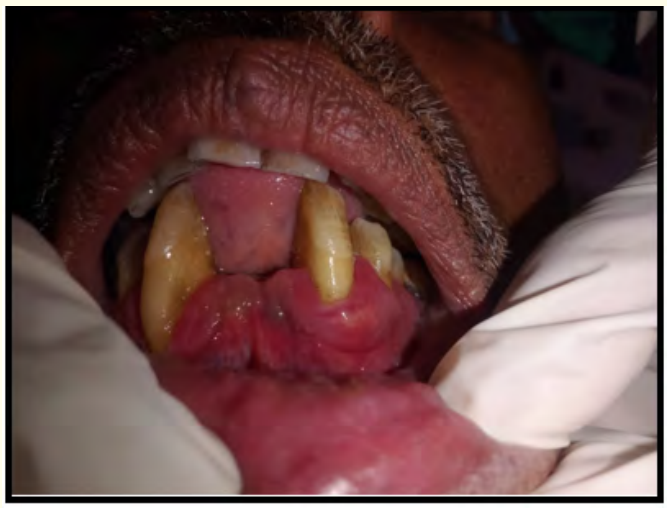

Figure 1: *Pre-curettage image showing the inflammatory component of the gingiva.*

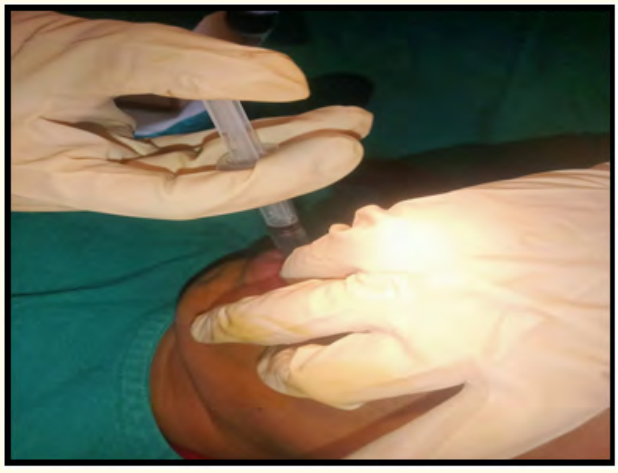

Figure 2: *Infiltration with local anaesthesia consisting lignocaine and adrenaline.*

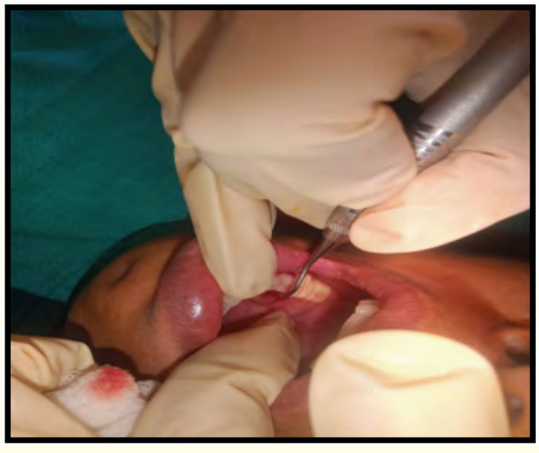

Figure 3: *Curettage with the universal Columbia curette.*

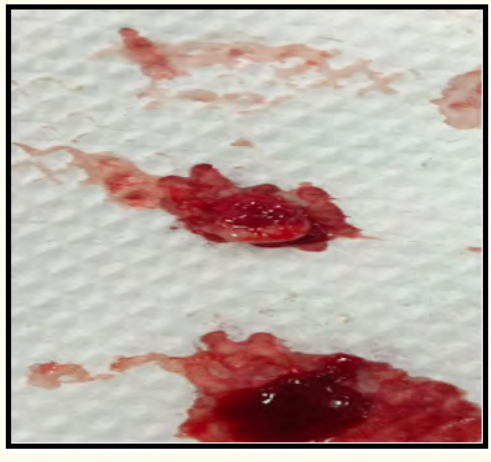

Figure 4: *Removed granulation tissue.*

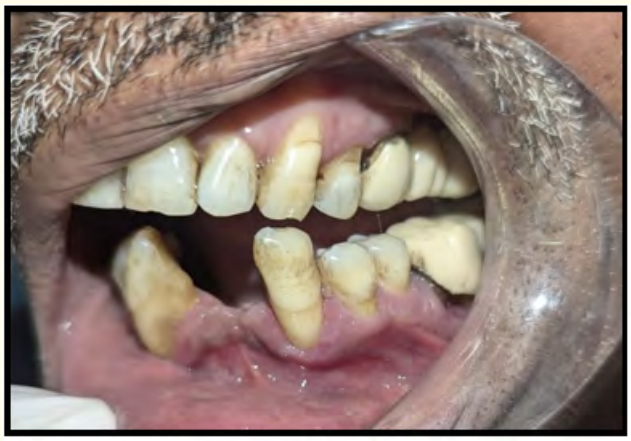

Figure 5: *Resolution of inflammatory component and restoration of health of gingival health to its normal level.*

Discussion

The main role of the curettage supports the fact that though scaling and root planning are the sufficient treatment modalities, to counteract gingival inflammation but sometimes because of the more presence of the infected granulation tissue deep inside the gingival wall of the periodontal pocket, scaling and root planning are not able to remove this infected granulation tissue completely and hence curettage in the form of the scraping of the gingival wall is needed to wall off this infected granulation tissue so that there is a resolution of the gingival inflammation [10]. Our case report coincides with the findings of the Radioautographic study conducted by stone, Ramjford and Waldron (1966) in which they concluded that normal gingival anatomy and physiology is restored in much shorter time and with considerable less postoperative irritation following curettage than following gingivectomy [11]. Seok-ho ji, Soo boo Han, Chul Woo Lee (1999) conducted the study on 14 patients in which they did only scaling and root planning without subgingival curettage and in other 7 patients they did scaling and root planning with subgingival curettage. After which they concluded that the amount of gingival recession was more after subgingival curettage which was also present in our case report [12]. Rahmi Sania, Sulistiawati and Ifadah (2024) in their case report which was based upon to determine that whether gingival curettage is effective for patients with chronic periodontitis showed that gingival curettage helped to reduce pocket depth and restored the gingiva to a more normal appearance and their case report also correlated with our case report which also showed that the curettage which we had done in our case had restored the gingiva to a more normal appearance [13]. Nikhil Olivia and dahlia Herawati (2022) showed in their case report, that curettage resolve the removal of the chronically inflamed granulation tissue that forms in the lateral wall of the periodontal pocket, which also correlated with our case report in which we had also removed inflamed granulation tissue, leading to the resolution of gingival inflammation [14].

Curettage can be attempted as a definitive procedure for those patients in which periodontal surgery is contraindicated or in those patients which do not give their concern for the periodontal surgery [15]. Curettage is also frequently performed on those patients in which there is a recurrence of the gingival inflammation after the periodontal surgery [16]. Thus from the above studies and case reports done previously had proven in correlation with our case report that gingival curettage when performed serves as a most important procedure in the resolution of the gingival inflammation by removal of the infected granulation tissue as well as local irritants, as a maintenance procedure after the recurrence of gingival inflammation following periodontal flap surgery, and as an indication for those periodontitis patients in which the periodontal surgery is contraindicated because of age, medical conditions, smoking or those who do not want to go for the periodontal flap surgery.

Conclusion

Though as per the recent concept curettage as a treatment modality is eradicated from the periodontal literature based upon the fact that scaling procedure sufficiently eradicates the local irritants from the gingival wall of the periodontal pocket. However, because of the difference in the scaling technique by different clinicians, the depth of the periodontal pocket, it may merely sometimes become difficult to remove all the local irritants because of which the gingival inflammation persists. Hence in this condition subgingival closed curettage when done as a treatment modality helps to remove the local irritants and the infected granulation tissue to the extent such that the gingiva becomes clinically healthy again.

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