

Management of Irritational Fibroma by Three Different Treatment Modalities - A Case Series

Dr. Sruthy Noble¹, Dr. Sanjeela Guru², Dr. Nisha K.J.³

¹PG student, Department of Periodontics, Vydehi Institute of Dental Sciences and Research Centre, Whitefield, Bangalore, India

²MDS, Reader, Department of Periodontics, Vydehi Institute of Dental Sciences and Research Centre, Whitefield, Bangalore, India

³Professor &HOD, Dept. of Periodontics, Vydehi Institute of Dental Sciences and Research Centre, Whitefield, Bangalore, India

Abstract:-

➤ Purpose

This case series demonstrates three different treatment modalities for excision of Irritational Fibroma.

➤ Case Presentation

Irritational fibromas are benign reactive or neoplastic lesions of oral cavity. They arise as a result of irritation due to plaque micro organisms and other local irritants. Treatment include both Non-Surgical (SRP) and Surgical therapy (excision using scalpel, electro cautery or laser.) The final diagnosis was confirmed after Histopathological examination.

Three cases are presented here with gingival overgrowth on various region of gingiva. Excisional biopsy was planned. The fibromas were excised using scalpel, laser and electrocautery. All the cases were evaluated for bleeding, pain and healing of surgical site post operatively. The blood loss and post operative pain for electro cautery and laser was very less as compared with scalpel surgery. After 6 months, all three cases presented uneventful healing.

➤ Conclusion

This article addresses the various treatment aspects for management of an irritational fibroma.

Keywords:- Fibroma, Scalpel, Electrocautery, Diode Laser, Excision.

I. INTRODUCTION

In the oral cavity, gingival growth is one of the most commonly encountered lesions, most of these lesions are benign, but some do have malignant potential. They may be diffuse or localised. Irritational fibroma is the most common tumor like and submucosal reactive lesion in the oral cavity that composed of fibrous or connective tissue caused by traumatic irritants such as calculi, foreign bodies, chronic biting, overhanging margins restoration, sharp spicules of bones and over extended borders of appliances.¹

Various modalities used for excision of fibroma include scalpels, laser and electrosurgery. Use of scalpel is the most common surgical approach for excision. Since

1928, electrosurgery has been used in dentistry for procedures like gingivectomy, gingivoplasty, growth excision, crown lengthening etc. Electrosurgery has coagulative effects that provide better clarity of the operative field due to the bloodless area.

Diode lasers are highly absorbed by melanin and hemoglobin allowing soft-tissue manipulations such as gingival recontouring, operculectomy, or frenectomy. They facilitate improved epithelization and wound healing.² The depth of incision of laser ranges from 2 to 6 mm.³

Therefore, diode lasers are advantageous as they provide better control, painless and cause decreased post-operative inflammation and improve wound healing.

This article discusses the various treatment modalities for excision of three different cases of Irritational fibroma.

II. CASE SERIES

A. Case 1

A 65 year old male reported to Department of Periodontics with chief complaint of swelling in his upper right back tooth region since 4 months. The patient gave history of growth which increased in size with time. History revealed no known family history of any such gingival overgrowth. Patient did not have any significant past dental history.

On extra oral examination, no gross facial asymmetry was detected. The lips were competent and non-tender and non-palpable lymph nodes. On intraoral examination, a solitary sessile diffuse growth in relation to 14,15 region was present. The growth was reddish pink measuring 1cm x1cm in dimension, firm in consistency and non-tender on palpation. Radiographic examination revealed no bone loss irt 14 and 15.

The provisional diagnosis of peripheral ossifying fibroma was given. The differential diagnosis consisted of pyogenic granuloma, peripheral giant cell granuloma, peripheral odontogenic fibroma. Phase 1 therapy ie.SRP was performed. The patient was prescribed chlorhexidine mouth wash twice daily for 1 week. The patient was then recalled after 1 week for excision of the lesion.The lesion was excised completely using scalpel.(Figure 1a),

following which a periodontal flap was reflected in order to gain access to the bone.(Figure 1b).

On reflection of the flap, calcified spicules were found within the elevated flap which was removed followed by debridement of the region. The excised tissue was submitted for histopathological examination. The patient presented for follow up examination 14 days postoperatively. On postoperative evaluation, the surgical site appeared to be healing well.(Figure 1c)

Histopathologically, parakeratotic, hyperplastic stratified squamous epithelium was seen. Underlying connective tissue shows dense bundles of collagen fibrils and some areas showed slight hyalinisation.

B. Case 2

A 32 year old male patient reported to Department of Periodontics with chief complaint of swelling in his lower front tooth region and gave history of difficulty in eating since 4 months. The lesion had initially started as a small growth, which gradually increased to the current size. The lesion did not bleed and had no history of pain. Intraoral examination revealed the lesion was measuring size 1cm x 1cm, pale in color, firm in consistency. Phase 1 therapy was carried out and chlorhexidine mouthwash was prescribed twice daily for 1 week. Surgical excision was done using laser. (Figure 2a) Postoperative healing was uneventful.(Figure 2c). Histopathologically, atrophic parakeratinised stratified squamous epithelium in association with fibrous connective tissue was seen.



Fig 1a:- Excision using Scalpel



Fig 1b:- Immediate post op



Fig 1c:- 3 months post op

Fig 1:- Excision of Fibroma using Scalpel



Fig 2a:- Excision using Diode Laser



Fig 2b:- Immediate post op



Fig 2c:- 3 months post op

Fig 2:- Excision of fibroma using Diode Laser

C. Case 3

A 44 year old male patient reported to Department of Periodontics with chief complaint of swelling in his upper front tooth region since 8 months and gave history of bleeding on palpation which arrested on its own. Patient had a poor oral hygiene with OHIS score of 5.0. Patient has not undergone any dental procedures before. On examination the lesion measured 2.5cm x1.3cm, greyish white in color was firm in consistency with irregular surface texture extending from 11 to 15. (Figure 3a) Radiograph revealed mild horizontal bone loss wrt 11 and 12. Phase 1 therapy was carried out and chlorhexidine mouthwash was prescribed twice daily for 1 week. Surgical excision was using electrocautery.(Figure 3b). The patient was reevaluated after 14 days and the healing of the lesion was satisfactory.(Figure 3c). Four month reevaluation revealed no evidence of recurrent lesion.

Histopathologically, hyperplastic to atrophic parakeratotic stratified squamous epithelium with underlying connective tissue showing increased number of collagen fiber bundles with areas suggestive of hyalinisation were seen.



Fig 3a:- Pre-op view



Fig 3b:- Excision using electrocautery



Fig 3c:- 3 months post-op view

Fig 3:- Excision of fibroma using Electrocautery

III. DISCUSSION

Irritational fibroma represents a reactive hyperplasia that develops as a result of chronic recurring tissue injury causing an excessive tissue repair response.⁴ Although they are treated by surgical excision, the underlying cause of irritation or trauma must also be eliminated. Conservative excisional biopsy is curative and its findings are diagnostic; however there are chances of recurrence if exposure to the irritant persists.⁵

On comparison of scalpel, laser and electrocautery, the scalpel has additional advantages of ease of use, sharp well defined incisions, rapid and uneventful healing, can be used in close proximity of bone and is economic. The use of scalpel is the most commonly used technique for oral surgeries due to its proven success since centuries and is inexpensive without need for additional equipments. However, considerable intraoperative bleeding due to severing of blood vessels, need of anesthesia, lack of visibility due to blood in the operating field and post-surgical scarring are the major drawbacks with use of scalpel.⁶

Electrosurgery involves the use of a high frequency electric current to tissues to cut, coagulate, desiccate or fulgurate tissue. Notable advantages of electrosurgery over the surgical scalpel include rapid dissection, precise tissue cutting with the self-disinfecting tip without use of manual pressure, immediate and consistent haemostasis that does not obscure the operative field, reduced overall operative blood loss, scar free wound healing.⁷ Atraumatic tissue cleavage and wound-sterilization eliminate the unfavourable postoperative discomfort common to scalpel surgery thereby contributing to rapid, uneventful postoperative healing.⁸

Electrocautery has some disadvantages like requirement of anesthetic agent prior to cutting, offensive burning-flesh odor, possibility of bone damage, contraindicated in patients with pacemakers, has low tactile sense, cannot be used around implants, and poor healing in irradiated patients or patients with diabetes or blood dyscrasias.⁷

Use of Diode Lasers for intraoral surgery has improved the success of surgical control of fibroma especially when large areas are involved.⁹ Numerous studies have shown that laser make sterile conditions because of reduction of bacteremia at the site of operation. Compared to conventional methods, laser surgery is relatively bloodless, promotes coagulation, does not require suturing thus reducing surgical time. There is minimal postsurgical pain and swelling, no scarring and maintains the elastic properties of the tissues.¹⁰

Of the three above mentioned cases, patient acceptance was more with laser surgery as it was painless both intra and postoperatively. Iyer *et al.*, suggested that management of Peripheral ossifying fibroma with minimal

intraoperative bleeding, post-operative pain, and excellent healing at the end of 1 week is best achieved with laser excision.¹¹

Laser wounds histologically have lower number of myofibroblasts¹² thus causing minimal wound contraction, scarring and ultimately better healing. On the other hand, laser also has disadvantages like eye damage by laser light requiring the use of protective glasses and a working area free of combustible gases.

In the present study, post-operative healing was found to be satisfactory in all the three cases. When compared to conventional surgery, lasers offer many advantages like less bleeding, scarring, pain, infection, swelling, reduction in surgical time and a good coagulation. Laser and electrocautery are superior over scalpel in relation to hemostasis, but also have disadvantages like lateral damage by heat, delayed wound healing, higher cost and need for skilled operator.

Laser is advantageous over electrocautery as it causes less lateral damage by heat, better wound healing and can be used in bone proximity. In the present study we found that diode laser was more effective than conventional surgery and electrocautery in reduction of bleeding and pain.

IV. CONCLUSION

Oral cavity is an ideal niche for manifestation of various reactive overgrowths of soft tissue which poses a diagnostic dilemma due to their similar clinical presentations. Treatment should be aimed at managing the source of the irritation as these lesions occur due to continuous tissue trauma and irritation. As the treatment modality is by surgical excision, Laser can be considered as a good modality even for very large lesions which are difficult to access by conventional surgery.

REFERENCES

- [1]. Neville B, Damm DD, Allen CM, Bouqout J. Oral and Maxillofacial Pathology. 3rd ed. United Kingdom: Saunders Elsevier; 2009.
- [2]. Ozcelik O, Cenk Haytac M, Kunin A, Seydaoglu G. Improved wound healing by low-level laser irradiation after gingivectomy operations: a controlled clinical pilot study. *J Clin Periodontol* 2008;35:250-254.
- [3]. Fornaini C, Rocca JP, Bertrand MF, Merigo E, Nammour S, Vescovi P. Nd:YAG and diode laser in the surgical management of soft tissues related to orthodontic treatment. *Photomed Laser Surg* 2007;25:381-392.
- [4]. Mohammed NA, Chandrasekharan SC, Mohan V. Fibroma of the gingiva :a case report of a 20 year old lesion. *Int J Contemp Dent* 2010;1:107-109.

- [5]. López-Labady J, Villarroel M, Lazarde J, Rivera H. Fibromantraumatico. Revisión de la literatura y reporte dos casos. *Acta Odontol Venez*, 2000;38: 47-49.
- [6]. Oringer MJ, *Electrosurgery in dentistry*. 2nd ed. Philadelphia: W.B. Saunders Company, 1975.
- [7]. Funde S, Baburaj MD, Pimpale SK. Comparison between laser, electrocautery and scalpel in the treatment of drug-induced gingival overgrowth- a case report. *IJSS Case Reports and Reviews* 2015; 1(10): 27-30.
- [8]. Sharma N, Sachdeva SD. A comparative study of electro-surgery and scalpel surgery. *Heal Talk* 2012; 5(1): 36-38.
- [9]. Niccoli-Filho W, Morosollo ARC, Bianchi M. CO2 Laser surgery of obstructive fibroma in the oropharyngeal cavity. *J Oral Laser Applications* 2005;5:103-105.
- [10]. Pai JB, Padma R, Divya, Malagi S, Kamath V, Shridhar A, et al. Excision of fibroma with diode laser: A case series. *J Dent Lasers*. 2014;8:34-38.
- [11]. Iyer V, Sarkar S, Kailasam S. Use of the ER, CR; YSGG laser in the treatment of peripheral ossifying fibroma. *Int J Laser Dent*. 2012;2:51-55
- [12]. Zeinoun T, Nammour S, Dourov N, Aftimos G, Luomanen M. Myofibroblasts in healing laser excision wounds. *Lasers Surg Med* 2001;28:74-79.