Case Report

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GINGIVECTOMY – LASER vs ELECTROCAUTERY: A SPLIT MOUTH CASE REPORT

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ABSTRACT:

The aim of this study was to present a case report and to compare the effect of electrocautery and lasers in the removal of chronic inflammatory gingival enlargement. The presence of local factors in the mucosa triggers a chronic inflammatory process leading to the formation of hyperplastic asymptomatic fibrous tissue. A 14 year old female patient reported with a chief complaint of swelling in the gums of all teeth. Gingival enlargement removal was done employing electrocautery and diode lasers after phase I therapy.

Keywords: Gingival enlargement, electrocautery, lasers, scalpel gingivectomy, local factors.

INTRODUCTION

Gingival enlargement is one of the common clinical finding of the gingival tissues caused by either inflammation of the gingival tissues or fibrous overgrowth or combination of both. It is a multifactorial condition initiated by microbial plaque and progressed by interaction between host and environment factors.

These gingival enlargements may cause functional esthetic and masticatory problems. The enlargement may be associated with one or more teeth, involve one or more quadrants, or may be generalized. The cause of enlargement is unknown but there appears to be a genetic predisposition.

Many techniques have been used for excision of enlarged gingival tissues including external or internal bevel gingivectomy in association with gingivoplasty with scalpel, an apically positioned flap, electrocautery, use of twelve fluted carbide bur in high speed hand piece, chemosurgery and CO2 laser. The most commonly used surgical approach for gingivectomy is with the use of a scalpel. But need of anesthesia, excessive bleeding, inadequate visibility caused by blood in the operating field, non-sterilized incision cut may be limitations for scalpel gingivectomy. To overcome these limitations of scalpel technique electrocautery and laser were used very recently. In this case report both these procedures were compared to see the effectiveness.[1-7]

CASE DETAIL:

A 14 year old female patient reported to the Department of Periodontology, HKES'sSN Dental College, Kalaburagi with a chief complaint of swelling and bleeding

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in the gums of all teeth. Local factors, like plaque and calculus were present. The enlargement was diffuse, soggy in appearance and edematous accompanied by an inflammatory component with probing depth of around 4-5mm and generalized gingival bleeding on probing (Fig 1&2).

There was no drug or systemic history reported. Also, there was no familial history present. On the first visit, oral hygiene instructions were given after scaling and polishing. After phase I therapy, the patient was recalled and results were evaluated.

A written consent was obtained before the procedure. Gingival enlargement removal was done employing electrocautery on the right side of the oral cavity and lasers on the left half.(split mouth).

DISCUSSION:

The most widely employed surgical approaches for the treatment of gingival enlargements is gingivectomy by surgical blade, laser or electrocautery . Among these modalities laser have advantages like relatively bloodless surgery, minimal swelling, scarring and coagulation, no need for suturing, reduction in surgical time and minimal or no post surgical pain. Also, the laser instantly disinfects the surgical wound and allow a noncontact type of operative procedure so that there is no mechanical trauma to the tissue. Laser transmits energy to the cells causing warming, welding, coagulation, protein denaturation, drying, vaporization and carbonization. The diode laser was introduced in dentistry and oral surgery in the mid-90s [8-11]. The diode laser devices have specifications such as relatively small size, portable and lower cost that attract the dental practitioners and oral surgeons for use in various surgical indications in comparison to other laser equipment. The diode lasers' affinity for ablating pigmented tissue, especially hemoglobin, make it superior for the soft tissue gingivectomy procedures compared with the traditionally-used scalpel in regards to hemostasis. However, little scientific evidence is available to support the anecdotal claims that the diode lasers are superior to the traditional scalpel and electrocautery for postoperative pain and soft tissue healing. The aim of the present study was to compare gingivectomies performed with a electrocautery and a soft tissue diode. Healing of soft tissues in both cases was equally efficient except that slight amount of redness was seen in case of electrocautery which was absent in laser treated area. Both techniques can be used to remove gingival overgrowth with equal efficiency and wound healing capacity. There is no advantage of diode laser over electrocautery in performing gingivectomy.

CONCLUSION:

Gingival enlargement a common condition associated with poor oral hygiene or increased local factors can be treated well by scalpel, electrocautery and lasers. Though scalpel technique is more commonly used the goal of bloodless operative is not possible. Hence other treatment modalities like lasers and electrocautery which create a hemostatic area were used and in the present case report both these procedures showed uneventful healing of the tissues. Laser and electrocautery have the upper hand

over the scalpel in relation to hemostasis, but also have demerits like lateral heat damage, delayed wound healing, skill of the operator and higher cost. Laser has advantage over electrocautery such as less lateral heat damage, better wound healing, and can be used in close proximity to bone as compared to electrocautery. Further studies that can show histological changes associated with these clinical changes can be encouraged to know the effectiveness of each technique.

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FIGURES:


Figures 1,2: Pre-operative view after phase I therapy.


Figure 3,4 : Bleeding points marked before the procedure


Excision performed using electrocautery (Fig 5) and lasers (Fig 6)

Post-operative view after 15 days with electrocautery (Fig 7) and lasers (Fig 8)