CASE REPORT

Chronic Inflammatory Gingival Overgrowths: Laser Gingivectomy & Gingivoplasty

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ABSTRACT

It is quite common to note chronic inflammatory Gingival overgrowths during and/or post orthodontic treatment. Sometimes the overgrowths may even potentially complicate and/or interrupt orthodontic treatment. With the introduction of soft tissue lasers these problems can now be addressed more easily. Amongst many LASERS now available in Dentistry DIODE LASERS seem to be most ideal for orthodontic soft tissue applications. As newer treatments herald into minimally invasive techniques, DIODE LASERS are becoming more promising both in patient satisfaction and dentist satisfaction.

Key words: Gingival overgrowth, LASERS, DIODE, Compliance.

How to cite this article: Shankar BS, Ramadevi T, Neetha M S, Reddy P S K, Saritha G, Reddy J M. Chronic Inflammatory Gingival Overgrowths: Laser Gingivectomy & Gingivoplasty. *J Int Oral Health 2013; 5(1):83-87.*

Source of Support: Nil **Conflict of Interest:** None Declared

Received: **29th October 2012** Reviewed: **28th November 2012** Accepted: **24th December 2012**

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Introduction:

It is quite common to note chronic inflammatory Gingival overgrowths during and/or post orthodontic treatment. Sometimes the overgrowths may even potentially complicate and/or interrupt orthodontic treatment. In spite of frequent patient education and motivation of the patient regarding oral hygiene, it's quite common to see patients developing gingival over growths because of poor compliance and complicated orthodontic appliance designs. Conventionally surgical gingival overgrowths are treated by Gingivoplasty or Gingivectomy using Surgical knifes & Blades. After evolution of soft tissue LASERS(Light Amplification by Stimulated Emission of Radiation) patients conventional techniques are replaced by LASER Gingivoplasty & Gingivectomy. The potential advantages of LASERS include: Minimized intra operative bleeding, Less operating time, Faster healing, Less postoperative pain and swelling, Good patient acceptance and ease for orthodontist to resume back to treatment fast[1-4].

This article presents case reports of successfully treated gingival overgrowths with Diode LASERS.

Degree of gingival overgrowths can be scored as[5]

Grade 0: No signs of gingival overgrowth.

Grade 1: Overgrowth confined to Interdental papilla.

Grade 2: Overgrowth involves papilla and marginal gingival.

Grade 3: Overgrowth covers three quarters or more of the crown.

Case 1:

A 19 year old female patient was referred from Department of Orthodontics to Department of Periodontology after her orthodontic treatment for correction of Gingival symmetry. Clinical examination revealed Grade II Gingival Overgrowths in relation to Maxillary & Mandibular anteriors. Patient also has significant physiological melanin pigmentation of attached Gingiva , Marginal Gingiva and Inderdental papilla (Figure:1). After appropriate patient education she was enrolled for Phase I periodontal therapy. After four weeks of recall there were no significant changes in the Gingival symmetry. Then patient was treated with Diode LASERS and Gingivoplasty and melanin depigmentation of Maxillary anterior Gingiva was performed. Post operatively patient was quite satisfied with both gingival symmetry and gingival colour.

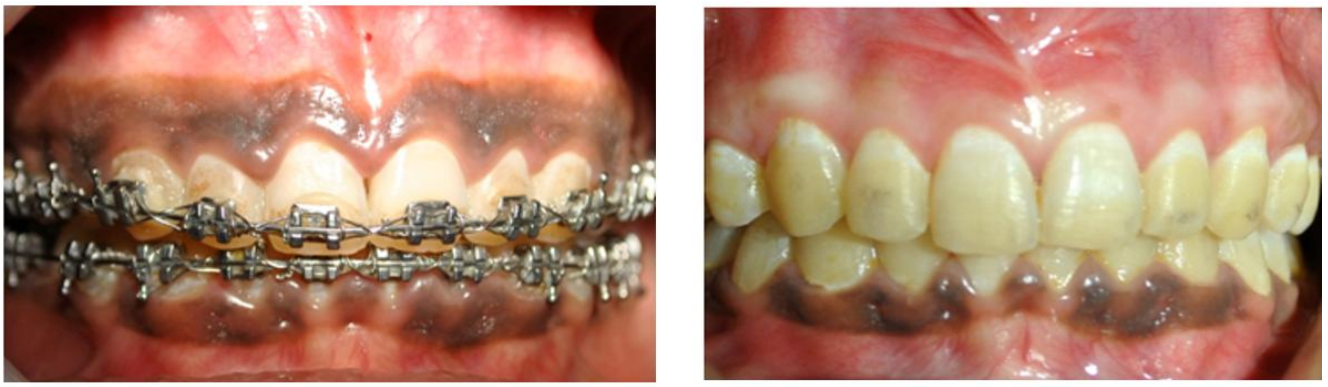

Fig. 1: Case 1 Pre and Post Operative Views

Case 2:

A 16 year old Female was referred from Orthodontics department to Department of Periodontology during her active treatment phase for assessment of Gingival condition. Clinical examination revealed generalized gingival enlargements along with generalized bleeding on probing. Orthodontist was advised to remove the arch wires and molar bands. After patient was explained about her gingival condition and the treatment, she was enrolled for Phase I therapy. After for weeks the Phase I therapy results were evaluated and further decision was made to

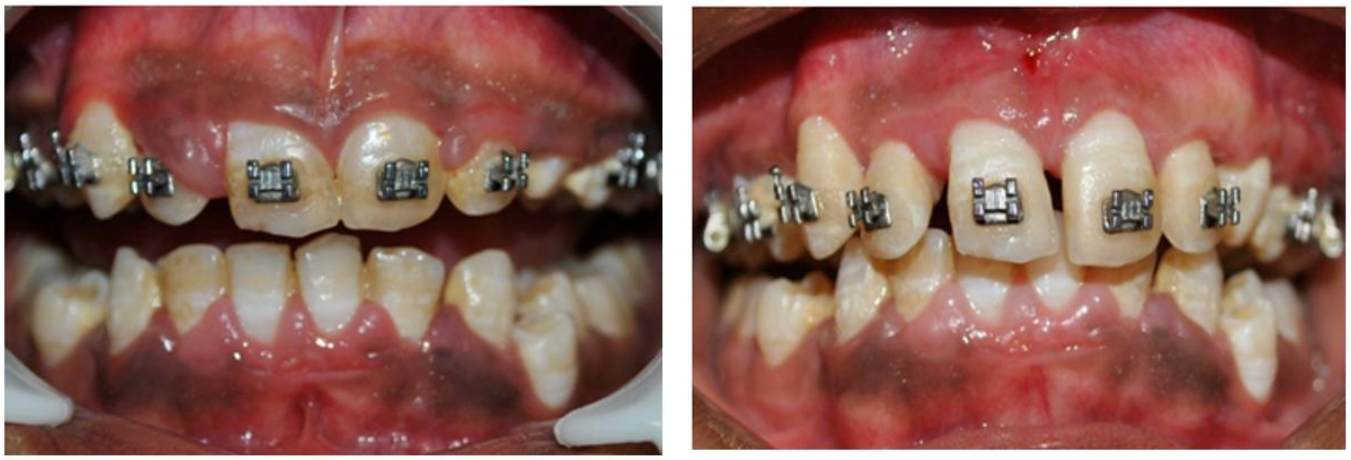

Fig. 2: Case 2 Pre and Post Operative Views

correct the residual Grade II gingival overgrowths by Diode LASERS (Figure: 2). After Diode LASER Gingivoplasty gingival architecture was reverted to normal. Orthodontic therapy was resumed after 2 weeks of adequate healing.

Fig. 3: Case 3 Pre and Post Operative Views

Case 3:

A 18 year old female patient was referred to Periodontology department amid her Orthodontic treatment. Intra oral examination revealed Grade II type Gingival Overgrowth in relation to Maxillary anteriors and second premolars. Orthodontist was advised to take off the arch wire and patient was enrolled for Phase I periodontal therapy. After evaluation of phase I results the decision was made to correct gingival overgrowths by Diode LASERS. Gingival overgrowth correction and melanin depigmentation of maxillary anterior gingival was done employing Diode LASERS. Orthodontic therapy was resumed after 2 weeks of adequate healing (Figure: 3).

Discussion:

Improper oral hygiene leads to plaque accumulations and subsequent periodontal problems and caries[6]. With fixed orthodontic appliances and patients' improper oral hygiene practices can compromise the orthodontic treatment outcomes[7]. In longterm orthodontics treatments only a 50% compliance rate has been noted[8]. Factors which can influence compliance include: patient characteristics,treatment duration and complexity, Dentist and patient relationship and educational and behavioral interventions used[9-13].

Orthodontists are frequently challenged by soft tissue problems associated with treatment.

Most frequent challenges include gingival overgrowths and gingival asymmetry that can turn even good treated case into one that falls short aesthetically. Conventional surgical gingivolplasties and gingivectomies have inherent patient related problems like: Surgical trauma, post operatve pain and swelling, poor patient acceptance etc. With the introduction of soft tissue lasers these problems can now be addressed more easily. Amongst many LASERS now available in Dentistry DIODE LASERS seem to be most ideal for orthodontic soft tissue applications[14](Table: 1).

DIODE LASERS are most ideal because of inherent advantages like[16]:

- Sole purpose is soft tissue removal
- No risk of damage to adjacent tooth Structure
- Excellent hemostasis
- Dry-field operation
- Light contact of the fiber tip with tissue
- Proprioceptive feedback
- Portability

Table I: Comparison of LASERS		
Type of LASER	**General View**	**Orthodontic Application Ideal/Not Ideal**
Co_2	Large size & expensive[14]	Not Ideal
Nd:YAG	Large size & expensive[14]	Not Ideal
Erbium	Performs hard and soft tissue procedures[15]	Not Ideal
DIODE	Exclusive soft tissue LASER[16]	Ideal

Incorporation of DIODE LASERS in orthodontists' office also helps to tackle with other soft tissue problems like[17-20]:

- Aesthetic gingival recontouring,
- Soft tissue crown lengthening,
- Exposure of soft-tissue impacted teeth
- Removal of inflamed and hypertrophic tissue and
- Frenectomies
- Tissue removal at the site for miniscrew

Conclusion:

With the advent of low intensity Soft tissue specific LASERS like DIODE, handling the soft tissue related complaints has become more ease and rewarding. As newer treatments herald into minimally invasive techniques, DIODE LASERS are becoming more promising both in patient satisfaction and dentist satisfaction.

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