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LANAP- A Neoteric Procedure in Periodontics

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Periodontitis is an immuno-inflammatory disease with classic signs of periodontal pockets, recession or both. The main goal of the periodontal treatment, thus, is not only to stop the progression of the disease but also to regenerate the lost periodontal components. Laser assisted new attachment procedure is one such method which facilitates proper healing of periodontal disease and its further progression. A 62 year old male patient reported to the department of periodontics with a history of type 2 diabetes mellitus. The patient had generalized deep pockets and generalized horizontal bone loss, based on which a diagnosis of generalized chronic periodontitis was made. A full mouth LANAP was planned for the patient. This case shows that LANAP can be considered a possible option for the treatment of periodontal pockets with a minimum operative and postoperative complications.

KEYWORDS: Periodontitis, Periodontal Pocket, LASER, Bone loss

INTRODUCTION

Periodontitis is an immuno-inflammatory disease with classic signs of periodontal pockets, recession or both. The main goal of the periodontal treatment, thus, is not only to stop the progression of the disease but also to regenerate the lost periodontal components.¹ Laser assisted new attachment procedure is one such method which facilitates both the goals with better patient acceptance and minimal postoperative hazards.

CASE REPORT

A 62 year old male patient reported to the department of periodontics with a history of type 2 diabetes mellitus with glycated haemoglobin value of 6%. The patient had generalized deep pockets and generalized horizontal bone loss, based on which a diagnosis of generalized chronic periodontitis was given (Figure 1 a,b,c and Figure 2 a,b,c,d). A full mouth LANAP was planned for the patient. The following sequence was followed while performing the procedure:

An initial supragingival scaling was done and after a re-evaluation the patient was ready for the laser procedure. While performing LANAP, the original protocol proposed by Gregg and McCarthy was followed with a modification, which was, the use of a diode laser in the place of an Nd:YAG laser.

After anesthetizing the area to be operated, the laser was passed for the first time into the tissues which was mainly done to remove off the epithelium which was diseased and formed the pocket lining. This step not only affects the diseased epithelial lining but also alters the calculus, facilitating its easy removal (Figure 1 a,b,c and Figure 3 a,b,c,d).

Next, the ultrasonic scalers were used to remove the calculus which was seen on the surface of the root and which had become visible and accessible due to the removal of the diseased epithelial lining.

The laser was then passed for the second time for facilitating and enhancing the formation of the fibrin clot and for disinfecting the area. This 'enhanced fibrin clot formation' is not only helpful for proper closure of the sulcus but also, in part, for the prevention of the encroachment of the above epithelium, thus preventing a long junctional epithelium formation. The clot was then compressed for proper adaptation and healing.

The patient was recalled at regular intervals for re-evaluation and maintenance. The probing depths

were checked after 9 months which on an average reduced from around 7.1mm to 3.5mm, with a lack of inflammation and recession (Figure 4 a,b,c,d).

DISCUSSION

In the recent times the craze for using newer technology has been on a rise and Laser is no exception. The origin of the LANAP protocol dates back to 1989 by Gregg R and McCarthy² and it got its FDA clearance in 2004.³ Histological studies done by Yukna et al. concluded that the LANAP resulted in the regeneration of the periodontium in humans.^{4,5} Few of the various advantages of using the laser assisted surgery for periodontal pockets are the reduction of post-operative recession and sensitivity, better psychological experience, better patient acceptance, simplicity of the procedure and better predictability. In the present case, a diode laser was used as compared to ND:YAG laser used in the original protocol to avoid the damage to root surfaces⁶ and for furnishing a greater depth of penetration. The patient was diabetic and the glycated haemoglobin (HBA1c) levels were borderline between controlled and uncontrolled which makes conventional surgery relatively

unpredictable with regards to the operative and post-operative sequales.

CONCLUSION

The present case shows that LANAP can be considered a possible option for the treatment of periodontal pockets with minimum operative and postoperative complications.

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LEGENDS



Figure 1 a,b,c. Pre-operative photographs



Figure 2 a, b, c, d. Pre-operative probing depths



Figure 3 a, b, c, d. Intra-operative view: Diode Laser being passed through the pockets



Figure 4 a, b, c, d. Post-operative view after 9 months. No recession was observed upon examination