

THE USE OF LASER FOR LEUKOPLAKIA ABLATION

Rita Alves¹, Gonçalo Assis², João Ferreira², João Caramês³

Department of Surgery and Oral Medicine, Dental Medicine School, University of Lisbon

¹Doctor of Dental Medicine, ²Assistant Lecturer of the Oral Surgery and Medicine Clinic, ³Senior Professor, Chairman of the Oral Surgery and Medicine Clinic



INTRODUCTION

The term oral leukoplakia is a clinical diagnosis for a predominantly white lesion which is not immediately recognizable as another well definable lesion which is white in appearance.

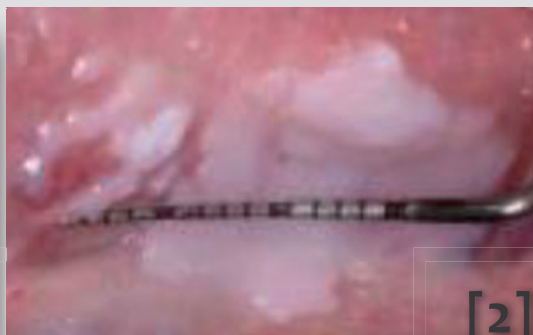
A patient with oral leukoplakia is generally referred to take a biopsy for a definitive histopathological diagnosis. The outcome of the histopathological study, which may vary from hyperkeratosis to invasive squamous cell carcinoma, will determine the treatment. Because of the risk of malignant transformation, many clinicians recommend the ablation of the lesion. Long term follow-up is indicated.

OBJECTIVE

The aim of this poster is to demonstrate one leukoplakia case with a relevant dimension on the tongue.

CLINICAL CASE DESCRIPTION

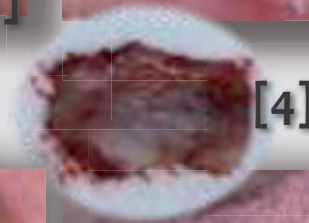
A 62-year-old female patient was diagnosed with a **white plaque lesion** on the **left side of the tongue** (Fig. 1, 2). An incisional biopsy was previously performed and the histopathologic analysis indicated the presence of mucosa with keratosis without dysplasia. The diagnosis was **leukoplakia with no dysplasia**. The patient was referred for completed excision.



The lesion was removed with safety margins using a **LASER Diode** (DenLase[®]) with power 4W, fiber 400 µm and pulse mode of 50-200 µs.

The piece was sent for analysis and the first diagnosis was confirmed (Fig. 3, 4).

Follow-up at 2 weeks and 3 months (Fig. 5, 6).



DISCUSSION

LASER has numerous advantages such as a better view of the surgery field, reduction of anesthetic needed, hemorrhagic risk and post-operative symptomatology, when compared with conventional surgery.^{1,4,6,9,10}

In extensive lesions, no need of suture could be an advantage. Due to the impossibility of closing the margins, a change of the original anatomy is prevented.^{7,8}

The malignant transformation of oral leukoplakia is about 3.5%, being the tongue one of the localizations with higher risk. Consequently, the complete ablation of the lesion is indicated.¹¹

LASER Diode promotes coagulation during the surgery which helps the acceleration of the healing process.^{1,2}

The chance of removing with no vaporization increases the possibility of a new analysis.^{3,5}

CONCLUSIONS

After the definitive differential diagnosis of a leukoplakia lesion, LASER is a safe and suitable option to removed oral lesions in particular cases, as an alternative of conventional surgery methods.

The patient's comfort in the post-operative time is probably the most important benefit from laser technique.

Long-term follow-ups are always indicated because of the potentially malignant transformation.

REFERENCES

- 1-Akbulut N., Kursun E., Tumer M., Kamburoglu K., Gulsen U: Is the 810-nm diode laser the best choice in oral soft tissue therapy? Eur J Dent 2013 Apr-Jun, 7(2), pp. 207-211.
- 2-Cavalcanti T. et al: Conhecimento das propriedades físicas e da interação do laser com os tecidos biológicos na odontologia. Anais Brasileiros de Dermatologia 2011, 86(5), pp. 955-960.
- 3-Del Corso G. et al: Laser evaporation versus laser excision of oral leukoplakia: A retrospective study with long-term follow-up. Journal of Cranio-Maxillo-Facial Surgery, July 2015, Vol 43 (6), pp. 763-768.
- 4-Genovese W. Laser de baixa intensidade: aplicações terapêuticas em odontologia. São-Paulo 2000, Lovise.
- 5-Ishii J., Fujita K., Komori T.: Laser surgery as a treatment for oral leukoplakia. Oral Oncology, Head and Neck Oncology Journal December 2003, Vol 39 (8), pp. 759-769.
- 6-Kundoor V: Efficacy of Diode Laser for the Management of Potentially Malignant Disorders. J Lasers Med Sci. 2015, 6(3), pp. 120-123.
- 7-Gupta S., Kumar S.: Lasers in Dentistry – an overview. Trends Biomater. Artif. Organs 2011, 35 (3), pp. 119-123.
- 8-Moritz A. et al.: Oral Laser Application. Berlin, Quintessence Books 2006.
- 9-Nammour S., Zeinoun T., Namour A., Vanheusden A., Vescovi P.: Evaluation of different laser-supported surgical protocols for the treatment of oral leukoplakia: a long-term follow-up. Photomedicine and Laser Surgery, April 2017.
- 10-Stauss R.: Lasers in oral and maxillofacial surgery. Dental Clinics of North America 2000, 4, pp. 851-871.
- 11-Warnakulasuriya S., Ariyawardana A.: Malignant transformation of oral leukoplakia: a systematic review of observational studies. J Oral Pathol Med 2016, 45, pp. 155-166.