The aim of the study is to evaluate the recurrence rate after laser vaporization of the entire lesion adding safety margins that has been recommended by Kuribayashi et al.\(^1\)

This study will be conducted on the population reporting to the department of Odontostomatological Science, 'Sapienza' University of Rome.

Collection of Data, general information including name, age, sex and address will be recorded, patient’s medical and dental history, intra-oral examination of soft tissue will be assessed and photographic documentation for each stage and each patient.

Inclusion Criteria, patients in the age group 18 to 70 years, the presence of oral Leukoplakia without dysplasia confirmed by the conventional incisional blade biopsy, all biopsies samples will be fixed in a 4% neutral-buffered formalin solution, embedded in paraffin, sectioned and stained with hematoxylin-eosin for conventional histopathological evaluation; smoking must be stopped 15 days before starting the treatment.

Exclusion Criteria, patients with Benign Alveolar Ridge Keratosis (BARK), debilitated patients, non-cooperative patients, patients with uncontrolled diabetes and hypertension and patients on anticoagulant and antiplatelet medication will be excluded.

Experimental Design, patients fulfilling above mentioned criteria will be selected and will be asked to give informed consent before the procedure.

The new epithelium, which migrates from the periphery to cover the wound, might originate from potentially unstable mucosa (Field of Cancerization); this may explain the development of new patches of oral Leukoplakia, adjacent to the margins of previously treated areas (peripheral recurrence).

Therefore, vaporization will be for the entire lesion adding 3 mm of safety margin in Test Group (TG) and adding a maximum 1 mm of safety margin in the Group Control (GC) measured by the periodontal probe and marked by a sterile demographic pencil. These procedures will be done using CO2 Laser, model (SmartXide®, DEKA, Florence, Italy, 10600 nm) with a power of 4.5 Watts on pulsed wave (80 Hz, fluence 44,78 J/cm\(^2\)) spot diameter 400μm; photos for each step will be taken for documentation with the same equipment (Nikon D200, Nikon Corporation, Tokyo, Japan).

Chlorhexidine spray 0.2% called (Corsodyl spray) will be prescribed; the application of this drug will be 3 times a day for 1 week; five follow-up visits will be performed according to this schedule: one week, three weeks, three months, six months and one year after the surgery. Comparisons for the recurrence rate, clinical features, location and treatment procedure will be examined.

Research progress, it is proposed to undertake this study on 15 lesions in Test Group (TG) and 15 lesions in Group Control (GC).

Recurrence rate evaluation, follow up for a maximum of one year; laser vaporization demonstrated that the complete healing occurred in 60% of the sections. The partial recurrence occurred in 25% of the sections. Moreover the complete recurrence occurred in 15% of the sections.

References, \(^1\)Kuribayashi, et al. (2012), Recurrence patterns of oral leukoplakia after curative surgical resection: important factors that predict the risk of recurrence and malignancy. Journal of Oral Pathology & Medicine, 41: 682–688. doi:10.1111/j.1600-0714.2012.01167.x"
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