

Effect of hyaluronic acid on the oral mucosa healing after diode laser biopsies

Submission date 29/08/2024	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
Registration date 06/09/2024	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
Last Edited 06/09/2024	Condition category Oral Health	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

Plain English summary of protocol

Background and study aims

Oral mucosa can be affected by lesions which interfere with many functions such as eating, speaking, and swallowing. Oral fibroma is one of these lesions that appears commonly in the oral cavity. It is the most common reactive lesion in the oral cavity. Fibroma results from a chronic repair process that includes granulation tissue and scar formation resulting in a fibrous submucosal mass. This lesion doesn't have a risk of malignancy transformation. The most common sites in the oral cavity are the tongue, buccal mucosa, and lower labial mucosa. An excisional biopsy is the treatment choice for irritation fibroma, either by surgical scalpel, electric scalpel, cryosurgery, or diode laser. Diode laser based on many studies is a very sufficient way of taking excisional biopsies, however, it has a thermal effect on the oral mucosa that affects mucosal healing, which makes it take longer to heal compared to the surgical conventional way. Accordingly, hyaluronic acid (HA) is now used to accelerate the mucosal healing process after excision using lasers in general.

Who can participate?

Patients aged between 20 and 40 years old who have oral fibroma and systemic diseases free

What does this study involve?

Participants are randomly allocated into three groups: Group A (HA gel + diode laser), Group B (HA mouthwash + diode laser), and Group C (control group, diode laser only). HA use instructions are given to the first two groups, and oral hygiene instructions are given to all groups.

What are the possible benefits and risks of participating?

Benefits may include healing acceleration due to the HA application after taking the excisional biopsy of the oral fibroma using a diode laser.

Possible risks might be experiencing some pain and discomfort after taking the biopsy, and a slow healing process due to the thermal effect of the diode laser and the ineffectiveness of the HA.

Where is the study run from?

Damascus University, Syria

When is the study starting and how long is it expected to run for?
June 2023 to October 2025

Who is funding the study?
Damascus University, Syria

Who is the main contact?
Dr. Amr Alyafi, amr.alyafi@hotmail.com, amr.alyafi97@damascusuniversity.edu.sy

Contact information

Type(s)

Public, Scientific, Principal investigator

Contact name

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Additional identifiers

Protocol serial number

5289

Study information

Scientific Title

Studying the effect of hyaluronic acid on mucosal healing after excisional oral biopsies with 810 nm diode laser

Study objectives

h0: There are no statistical differences between the three studied groups. (HA gel group, HA mouthwash group, and only diode laser group)

h1: There are statistically significant differences between the three studied groups.

Ethics approval required

Ethics approval required

Ethics approval(s)

approved 07/08/2023, Scientific Ethics Committee at Damascus University (Baramkeh, Damascus, 4671, Syria; +9631133923223; ap.srd@damascusuniversity.edu.sy), ref: 3437

Study design

Randomized controlled trial

Primary study design

Interventional

Study type(s)

Other, Treatment, Efficacy

Health condition(s) or problem(s) studied

Mucosal healing after oral excisional biopsies

Interventions

This study is designed to evaluate the effect of hyaluronic acid (HA; Mouthwash - Gel) on mucosal healing after oral excisional biopsies with an 810 nm diode laser.

A simple method of randomisation is used that involves writing the group name (A, B, C) on a piece of paper inside three envelopes, and letting the patient choose the envelope randomly.

A brief methodology for each treatment arm:

-Group A (HA gel group + diode laser):

After taking the excisional biopsy with a diode laser (with parameters of 810 nm, 4W) which takes approximately less than 5 minutes, the patients will be given topical hyaluronic acid gel 0.2% to apply on the wound 3 times daily for 10 days. After each appliance, the patient should not eat or drink for an hour.

-Group B (HA mouthwash group + diode laser):

After taking the excisional biopsy with a diode laser (with parameters of 810 nm, 4W) which takes approximately less than 5 minutes, the patients will be given hyaluronic acid mouthwash 0.025% to rinse with 3 times daily out of brushing times for 10 days, by keeping it for a minute in the mouth and then spitting it out. After each rinsing the patient should not eat or drink for an hour.

-Group C (diode laser only):

After taking the excisional biopsy with a diode laser (with parameters of 810 nm, 4W) which takes approximately less than 5 minutes, the wound will be left to heal spontaneously without applying any drug.

Percentage healing index (PHI: is an index that helps determine the healing process by taking a picture of the excision wound after the procedure immediately and after every follow-up visit, and then using the Adobe Photoshop application on PC to measure the excision wound area in square millimeters.

Intervention Type

Procedure/Surgery

Primary outcome(s)

Excision wound area measured using the Percentage Healing Index (PHI) after the excision immediately (T0), at day 4 (T1), week 1 (T2), week 2 (T3), and 1 month (T4)

Key secondary outcome(s)

Pain is measured using a Visual Analogue Scale (VAS) at day 4, week 1, week 2, and 1 month

Completion date

24/10/2025

Eligibility

Key inclusion criteria

1. Patients that have oral fibromas on the non-keratinized oral mucosa
2. Excisional biopsy wounds with a diameter of less than 10mm

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Lower age limit

20 years

Upper age limit

40 years

Sex

All

Key exclusion criteria

1. People who have systemic diseases
2. Smokers
3. Alcoholics

Date of first enrolment

01/07/2023

Date of final enrolment

01/07/2025

Locations

Countries of recruitment

Syria

Study participating centre
Oral Medicine Department, Faculty of Dental Medicine, Damascus University
Mezzeh highway
Damascus
Syria
4671

Sponsor information

Organisation
Damascus University

ROR
<https://ror.org/03m098d13>

Funder(s)

Funder type
University/education

Funder Name
Damascus University

Alternative Name(s)
University of Damascus, , DU

Funding Body Type
Government organisation

Funding Body Subtype
Universities (academic only)

Location
Syria

Results and Publications

Individual participant data (IPD) sharing plan

The data sets will be generated and analyzed during the current study and will be available upon request from Amr Alyafi, amr.alyafi@hotmail.com, amr.alyafi97@damascusuniversity.edu.sy

IPD sharing plan summary

Available on request

Study outputs

Output type

[Participant information sheet](#)

[Participant information sheet](#)

Details	Date created	Date added	Peer reviewed?	Patient-facing?
		02/09/2024	No	Yes
		02/09/2024	No	Yes