Clinical Trial Protocol
Iranian Registry of Clinical Trials

16 Sep 2026

Comparison of effect of diode laser, astringent paste, and subgingival cord on gingival retraction during impression using a 3D intraoral scanner: a randomized clinical trial

Protocol summary

Study aim
To compare the effect of diode laser, astringent paste, and subgingival cord on gingival retraction during impression using a 3D intraoral scanner

Design
This is a randomized clinical trial, phase II, in which 45 eligible patients will be randomly assigned to the intervention and control groups

Settings and conduct
The eligible patients need dental veneers referring to the School of Dentistry in Hamadan city during the study period will be enrolled in the trial and will be randomly assigned to the intervention and control groups through the drawing of lots.

Participants/Inclusion and exclusion criteria
Inclusion criteria: Age of 18 to 65 years, Tooth decay, The need for dental veneers, Exclusion criteria: Inadequate oral hygiene, Periodontal disease

Intervention groups
Intervention group 1: Preparing and cutting teeth and applying temporary resin crown with hidden edges using a 980 nm diode laser with a tip of half a millimeter with a low power of 0.7 to 2 W Intervention Group 2: Preparing and cutting teeth and applying temporary resin crown with hidden edges using gum threads inside the gingival groove Intervention Group 3: Preparing and cutting teeth and applying temporary resin crown with hidden edges using an astringent paste to cover the gingival groove

Main outcome variables
Primary outcome: Gingival retraction

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20120215009014N359**
Registration date: **2020-06-08, 1399/03/19**
Registration timing: **retrospective**

Last update: **2020-06-08, 1399/03/19**
Update count: **0**

Registration date
2020-06-08, 1399/03/19

Registrant information

Name
Jalal Poorolajal

Name of organization / entity
Department of Epidemiology & Biostatistics Hamadan University of Medical Sciences

Country
Iran (Islamic Republic of)

Phone
+98 81 1838 0090

Email address
poorolajal@umsha.ac.ir

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2019-12-22, 1398/10/01

Expected recruitment end date
2020-04-19, 1399/01/31

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
Comparison of effect of diode laser, astringent paste, and subgingival cord on gingival retraction during impression

using a 3D intraoral scanner: a randomized clinical trial

Public title
Comparison of effect of diode laser, astringent paste, and subgingival cord on gingival retraction during impression using a 3D intraoral scanner
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Age of 18 to 65 years, Tooth decay, The need for dental veneers,
Exclusion criteria:
Inadequate oral hygiene, Periodontal disease
Age
From **18 years** old to **65 years** old
Gender
Both

Phase
N/A
Groups that have been masked
No information
Sample size
Target sample size: **45**
Randomization (investigator's opinion)
Randomized
Randomization description
Random assignment of the patients to the intervention and control groups through the drawing of lots. To do this, we prepare two sheets and write "intervention 1" on one sheet and "intervention 2" on the second sheet and “intervention 3” on the third one. Then, by referring each patient, one of the sheets will be randomly taken and the patient will be assigned to the intervention groups.
Blinding (investigator's opinion)
Not blinded
Blinding description
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics Committee of Hamadan University of Medical Sciences
Street address
Vice-chancellor for Research and Technology, Hamadan University of Medical Sciences, Shahid Fahmideh Ave
City
Hamadan
Province
Hamadan
Postal code
6517838695
Approval date
2019-12-07, 1398/09/16
Ethics committee reference number
IR.UMSHA.REC.1398.719

Health conditions studied

1

Description of health condition studied
Dental caries
ICD-10 code
K02
ICD-10 code description
Dental caries

Primary outcomes

1

Description
Gingival retraction
Timepoint
Before the intervention and immediately after that
Method of measurement
Using a 3D intraoral scanner

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group 1: Preparing and cutting teeth and applying temporary resin crown with hidden edges using a 980 nm diode laser with a tip of half a mm with low power of 0.7 to 2 W
Category
Treatment - Other

2

Description
Intervention Group 2: Preparing and cutting teeth and applying temporary resin crown with hidden edges using gum threads inside the gingival groove
Category
Treatment - Other

3

Description
Intervention Group 3:Preparing and cutting teeth and applying temporary resin crown with hidden edges using an astringent paste to cover the gingival groove
Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center
School of Dentistry in Hamadan city

Full name of responsible person
Seyed Farzad Kohnepoushi

Street address
School of Dentistry, Hamadan University of Medical Sciences, Shahid Fahmideh Ave.

City
Hamadan

Province
Hamadan

Postal code
6517838695

Phone
+98 81 3838 0572

Email
m_kohnepoushi@yahoo.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Hamedan University of Medical Sciences

Full name of responsible person
Dr. Saeid Bashirian

Street address
Hamadan University of Medical Sciences, Shahid Fahmideh Ave

City
Hamadan

Province
Hamadan

Postal code
6517838695

Phone
+98 81 3838 0717

Email
info.research@umsha.ac.ir

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?
Yes

Title of funding source
Hamedan University of Medical Sciences

Proportion provided by this source
100

Public or private sector
Public

Domestic or foreign origin
Domestic

Category of foreign source of funding
empty

Country of origin

Type of organization providing the funding
Academic

Person responsible for general inquiries

Contact

Name of organization / entity
Hamedan University of Medical Sciences

Full name of responsible person
Seyed Farzad Kohnepoushi

Position
Dentistry Student

Latest degree
Medical doctor

Other areas of specialty/work
Dentistry

Street address
School of Dentistry, Hamadan University of Medical Sciences, Shahid Fahmideh Ave.

City
Hamadan

Province
Hamadan

Postal code
6517838695

Phone
+98 81 3838 0572

Email
m_kohnepoushi@yahoo.com

Person responsible for scientific inquiries

Contact

Name of organization / entity
Hamedan University of Medical Sciences

Full name of responsible person
Dr. Fariborz Vafaee

Position
Dental Prosthesis Specialist

Latest degree
Medical doctor

Other areas of specialty/work
Dentistry

Street address
School of Dentistry, Hamadan University of Medical Sciences, Shahid Fahmideh Ave.

City
Hamadan

Province
Hamadan

Postal code
6517838695

Phone
+98 81 3838 0572

Email
fvafaee@umsah.ac.ir

Person responsible for updating data

Contact

Name of organization / entity
Hamedan University of Medical Sciences
Full name of responsible person
Dr. Jalal Poorolajal
Position
Professor of Epidemiology
Latest degree
Ph.D.
Other areas of specialty/work
Epidemiology
Street address
School of Public Health, Hamadan University of Medical Sciences, Shahid Fahmideh Ave
City
Hamadan
Province
Hamadan
Postal code
6517838695
Phone
+98 81 3838 0090
Email
poorolajal@umsha.ac.ir

Sharing plan

Deidentified Individual Participant Data Set (IPD)
Undecided - It is not yet known if there will be a plan to make this available
Study Protocol
Undecided - It is not yet known if there will be a plan to make this available
Statistical Analysis Plan
Undecided - It is not yet known if there will be a plan to make this available
Informed Consent Form
Undecided - It is not yet known if there will be a plan to make this available
Clinical Study Report
Undecided - It is not yet known if there will be a plan to make this available
Analytic Code
Undecided - It is not yet known if there will be a plan to make this available
Data Dictionary
Undecided - It is not yet known if there will be a plan to make this available