

Clinical Trial Protocol

Iranian Registry of Clinical Trials

25 Jun 2026

Effect of corticotomy with and without lasercision on the canine retraction in orthodontic patients: a randomized clinical trial

Protocol summary

Study aim

To assess the effect of corticotomy with and without lasercision on the canine retraction in orthodontic patients

Design

This is a randomized clinical trial, phase II, in which 12 eligible patients will be randomly assigned to the intervention and control groups

Settings and conduct

The eligible orthodontic patients who will refer to School of Dentistry in Hamadan City during the study period will be enrolled in the trial.

Participants/Inclusion and exclusion criteria

Inclusion criteria: Age of 15 to 30 years Corticotomy of maxilla Pulling bilateral premolars Proper oral hygiene Adequate thickness of adhesive gums (1 to 2 mm)
Exclusion criteria: Active periodontitis Probe depth of above 3 mm A previous history of orthodontic Any systematic disease Vitamin D deficiency Using NSAIDS drugs or hormonal supplements or tricyclic antidepressants

Intervention groups

Intervention group: Corticotomy of maxilla on one side with lasercision 2780 nm, 30 hz, 3.5 W Control group: Corticotomy of maxilla on the side without lasercision

Main outcome variables

Primary outcome: Assessing the canine movement
Assessing the molar movement

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20120215009014N280**
Registration date: **2019-05-22, 1398/03/01**
Registration timing: **retrospective**

Last update: **2019-05-22, 1398/03/01**

Update count: **0**

Registration date

2019-05-22, 1398/03/01

Registrant information

Name

Jalal Poorolajal

Name of organization / entity

Department of Epidemiology & Biostatistics Hamadan University of Medical Sciences

Country

Iran (Islamic Republic of)

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+98 81 1838 0090

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-04-04, 1398/01/15

Expected recruitment end date

2019-05-21, 1398/02/31

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effect of corticotomy with and without lasercision on the canine retraction in orthodontic patients: a randomized clinical trial

Public title

Effect of corticotomy with and without lasercision on the canine retraction in orthodontic patients

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Age of 15 to 30 years
Corticotomy of maxilla
Pulling bilateral premolars
Proper oral hygiene
Adequate thickness of adhesive gums (1 to 2 mm)

Exclusion criteria:

Active periodontitis
Probe depth of above 3 mm
Any previous history of orthodontic
Any systematic disease
Vitamin D deficiency
Using NSAIDS drugs or hormonal supplements or tricyclic antidepressants

Age

From **15 years** old to **30 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **12**

Randomization (investigator's opinion)

Randomized

Randomization description

Random assignment of the right and left sides of the patients to the intervention and control groups through the tossing coin.

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

2019-03-09, 1397/12/18

Ethics committee reference number

IR.UMSHA.REC.1397.969

Health conditions studied

1

Description of health condition studied

Orthodontic

ICD-10 code

Z46.4

ICD-10 code description

Encounter for fitting and adjustment of orthodontic device

Primary outcomes

1

Description

Assessing the canine movement

Timepoint

7 days after the intervention

Method of measurement

With physical examination

2

Description

Assessing the molar movement

Timepoint

7 days after the intervention

Method of measurement

With physical examination

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Corticotomy of maxilla on one side with lasercision 2780 nm, 30 hz, 3.5 W

Category

Other

2

Description

Control group: Corticotomy of maxilla on the side without lasercision

Category

Other

Recruitment centers

1

Recruitment center

Name of recruitment center

School of Dentistry in Hamadan City

Full name of responsible person

Azadeh Kazemi Saleh

Street address

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

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Hamedan University of Medical Sciences

Full name of responsible person

Dr Saeid Bashirian

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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

Azadeh Kazemi Saleh

Position

Dentistry Student

Latest degree

Medical doctor

Other areas of specialty/work

Dentistry

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Person responsible for scientific inquiries

Contact

Name of organization / entity

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Dr. Majid Mahmoodzadeh

Position

Orthodontist

Latest degree

Medical doctor

Other areas of specialty/work

Dentistry

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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

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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