

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Effect of co2 laser irradiation on the surface of the polycrystalline ceramic bracket and the rate of Canine movement with sliding mechanic

Protocol summary

Study aim

Effect of co2 laser irradiation on the surface of the polycrystalline ceramic bracket and the rate of canine movement with sliding mechanic

Design

Clinical trial with control group, parallel group, double blind, randomized

Settings and conduct

Babol university of medical science, college of dentistry, Department of Orthodontics All members of this study except analyzers are blinded.

Participants/Inclusion and exclusion criteria

Patient with crowding and protrusion without any totally blocked out tooth.

Intervention groups

In the control group we bond normal brackets. In the case group we bond irradiated.

Main outcome variables

Change in the rate of tooth movement

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20180314039093N1**

Registration date: **2018-04-17, 1397/01/28**

Registration timing: **prospective**

Last update: **2018-04-17, 1397/01/28**

Update count: **0**

Registration date

2018-04-17, 1397/01/28

Registrant information

Name

Mostafa Ebrahimi

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 11 3229 7951

Email address

m.ebrahimi@mubabol.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2018-05-05, 1397/02/15

Expected recruitment end date

2018-06-05, 1397/03/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effect of co2 laser irradiation on the surface of the polycrystalline ceramic bracket and the rate of Canine movement with sliding mechanic

Public title

Effect of co2 laser irradiation on the surface of the polycrystalline ceramic bracket and the rate of Canine movement with sliding mechanic

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Patient with protrusion and crowding

Exclusion criteria:

Totally blocked out Canine or Premolar

Age

No age limit

Gender

Both

Phase

N/A

Groups that have been masked

- Participant
- Care provider
- Investigator
- Outcome assessor

Sample size

Target sample size: **7**

More than 1 sample in each individual

Number of samples in each individual: **4**

In each jaw there is one case and one control.

Randomization (investigator's opinion)

Randomized

Randomization description

Method: simple Unit: individual Tool: randomized number table

Blinding (investigator's opinion)

Double blinded

Blinding description

Brackets are divided into two groups; irradiated and not irradiated and all members except the third person are unaware.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of babol university of medical sciences

Street address

babol university of medical science, Entefazeh Sqr

City

Babol

Province

Mazandaran

Postal code

4717643633

Approval date

2018-02-26, 1396/12/07

Ethics committee reference number

MUBABOL.HRI.REC.1396.216

Health conditions studied

1

Description of health condition studied

Orthodontics with extraction

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Rate of space closure

Timepoint

Measurement of available space in 4, 8 and 12 weeks after force application

Method of measurement

Caliper

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Use of ceramic brackets that irradiated with co2 laser, for retraction

Category

Treatment - Devices

Recruitment centers

1

Recruitment center

Name of recruitment center

college of dentistry, Babol university of medical science

Full name of responsible person

Mostafa Ebrahimi

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Babol University of Medical Sciences

Full name of responsible person

Reza Ghadimi

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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

Babol 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

Babol University of Medical Sciences

Full name of responsible person

Mostafa Ebrahimi

Position

Resident

Latest degree

Medical doctor

Other areas of specialty/work

Dentistry

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inquiries

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Person responsible for updating data

Contact

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Yes - There is a plan to make this available

Study Protocol

Yes - There is a plan to make this available

Statistical Analysis Plan

Not applicable

Informed Consent Form

Yes - There is a plan to make this available

Clinical Study Report

Yes - There is a plan to make this available

Analytic Code

Yes - There is a plan to make this available

Data Dictionary

Not applicable

Title and more details about the data/document

All information

When the data will become available and for how long

6 months after publication

To whom data/document is available

employees in academic institutions

Under which criteria data/document could be used

With reference to the original article, the use of the results provided is permissible.

From where data/document is obtainable

Research center of dentistry college, medical university of Babol

What processes are involved for a request to access data/document

Request to research center of dentistry college, medical university of Babol

Comments