Clinical Trial Protocol
Iranian Registry of Clinical Trials

17 Sep 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
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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
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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
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Babol University of Medical Sciences
Full name of responsible person

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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
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Position
Resident
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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