

Clinical Trial Protocol

Iranian Registry of Clinical Trials

16 Sep 2026

Comparison of clinical fitting and adjustment time for implant-supported crowns produced by conventional and digital workflow in partial edentulous patients

Protocol summary

Study aim

Comparison of clinical fitting and adjustment time for implant-supported crowns produced by conventional and digital workflow in partial edentulous patients

Design

Two arm parallel group randomised trial with blinded outcome assessment is performed. Thirty (30) patients are enrolled in the study. Patients are randomly divided into two groups.

Settings and conduct

Clinical trial is done at Mashhad Dental School. Treatment plan is done on two adjacent posterior implants. The crowns splinted to each other and adjusting is done on full Contour crowns. Adjusting time is recorded. The outcome assessor and data analyzer will kept blinded.

Participants/Inclusion and exclusion criteria

Inclusion criteria: Two neighbor implants in premolar and molar sites with existing interproximal and antagonistic contacts; Periodontal conditions of the patient should be healthy or successfully treated; Patients' age should be at least 18 years old; The distance between the two implants should be 3 mm and the distance between the implants and tooth should be at least 1.5 mm; Maximum angle of the two implants should be 25 degrees.

Exclusion criteria: smoker patients

Intervention groups

Intervention group: Digital impression is taken with oral scanner. The STL-data of virtual impression are sent to dental laboratory. Customized titanium abutments and full contour zirconia crowns are designed simultaneously and then are milled. Control group: Impression taking of implants is done with open tray technique and silicone materials. Impressions are sent to dental laboratory. Casts are poured and then scanned with laboratory scanner. Customized titanium abutments and full contour zirconia crowns are designed simultaneously and then are milled.

Main outcome variables

Adjustment time of implant supported crown

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20181216041993N1**

Registration date: **2019-03-30, 1398/01/10**

Registration timing: **retrospective**

Last update: **2019-03-30, 1398/01/10**

Update count: **0**

Registration date

2019-03-30, 1398/01/10

Registrant information

Name

Ehsan Kiamanesh

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 51 3882 9501

Email address

kiamaneshe951@mums.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-01-05, 1397/10/15

Expected recruitment end date

2019-02-20, 1397/12/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date
empty

Scientific title
Comparison of clinical fitting and adjustment time for implant-supported crowns produced by conventional and digital workflow in partial edentulous patients

Public title
Effect of production method on the accuracy of implant-supported crowns

Purpose
Treatment

Inclusion/Exclusion criteria
Inclusion criteria:
 Two neighbor implants in premolar and molar sites with existing interproximal and antagonistic contacts. Periodontal conditions of the patient should be healthy or successfully treated Being at the age of 18 years and over The distance between the two implants is 3 mm and the distance between the implants and tooth is at least 1.5 mm Maximum angle of the two implants should be 25 degrees
Exclusion criteria:
 smoker patients

Age
From **18 years** old

Gender
Both

Phase
N/A

Groups that have been masked

- Outcome assessor
- Data analyser

Sample size
Target sample size: **30**

Randomization (investigator's opinion)
Randomized

Randomization description
Numbers 1 to 30 are placed inside the envelope. Patients randomly take a number from the envelope. The patients with odd numbers will be in the control group and the patients with even numbers will be in the intervention group.

Blinding (investigator's opinion)
Single blinded

Blinding description
After the abutments and crowns were prepared, They are delivered in the same package to the evaluator of the outcomes. Without knowledge of the patient group, He does the process of adjusting the crowns and Records the outcomes.

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Mashhad University of Medical Sciences

Street address

Mashhad Dental School, in front of Mellat Park, Vakil Abad Blvd

City

Mashhad

Province

Razavi Khorasan

Postal code

9177948959

Approval date

2018-11-21, 1397/08/30

Ethics committee reference number

IR.MUMS.DENTISTRY.REC.1397.086

Health conditions studied

1

Description of health condition studied

Impression taking procedure of implants

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Adjustment time of implant supported crowns

Timepoint

At the time of try-in the crowns

Method of measurement

Digital timer

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Digital impression is taken with oral scanner. The STL-data of virtual impression are sent to dental laboratory. customized titanium abutments and full contour zirconia crowns are designed simultaneously and then are milled.

Category

Treatment - Other

2

Description

Control group: Impression taking of implants is done with open tray technique and silicone materials. Impressions are sent to dental laboratory. Casts are poured and then scanned with laboratory scanner. Customized titanium abutments and full contour zirconia crowns are designed simultaneously and then are milled.

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Mashhad Dental School

Full name of responsible person

Ehsan Kiamanesh

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Mashhad Dental School, in front of Mellat Park, Vakili
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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Mashhad University of Medical Sciences

Full name of responsible person

Mohsen Tafaghodi

Street address

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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

Mashhad 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

Mashhad University of Medical Sciences

Full name of responsible person

Ehsan kiamanesh

Position

resident

Latest degree

Medical doctor

Other areas of specialty/work

Dentistry

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Person responsible for scientific inquiries

Contact

Name of organization / entity

Mashhad University of Medical Sciences

Full name of responsible person

Hamid Reza Rajati haghi

Position

Assistant Professor

Latest degree

Specialist

Other areas of specialty/work

Dentistry

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rajatihr@mums.ac.ir

Person responsible for updating data

Contact

Name of organization / entity
Mashhad University of Medical Sciences
Full name of responsible person
Ehsan kiamanesh
Position
resident
Latest degree
Medical doctor
Other areas of specialty/work
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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

Yes - There is a plan to make this available

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

Yes - There is a plan to make this available

Title and more details about the data/document

All data can be shared after making all data
unidentifiable

When the data will become available and for how long

The access period starts one year after the results are
printed

To whom data/document is available

Researchers working in academic and scientific
institutions

Under which criteria data/document could be used

For use in scientific articles with mention of the source

From where data/document is obtainable

Ehsan Kiamanesh Mashhad Dental School, in front of
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kiamaneshe951@mums.ac.ir

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

Requests are received by email and will be answered
after the evaluation.

Comments