

Clinical Trial Protocol

Iranian Registry of Clinical Trials

22 Sep 2026

Comparison of Postoperative Pain in Immediate Dental Implantation and Delayed Dental Implantation for Patients in need of Dental Implantation

Protocol summary

Study aim

Postoperative pain in immediate and delayed implant placement will be compared.

Design

The clinical trial has a control group, with parallel groups, with blinded outcome assessment, randomized by statistical software into blocks of 6, the expected sample size is 20 people and therefore the total sample size is 40.

Settings and conduct

This study will be conducted in the surgery department of Semnan University of Medical Sciences, Faculty of Dentistry. The type of implant in the first surgery will be chosen randomly. Blinded outcome assessment will be performed.

Participants/Inclusion and exclusion criteria

The desired criteria to enter: having two teeth (on each side of the jaw) that need to be replaced with an implant, one tooth should be extracted and the bone in that area should be healed, but the contralateral tooth must be present so the implant can be placed immediately after the extraction, there must be a gap of less than 2 mm to place the immediate implant in the socket of the patient's extracted tooth. The patient should be in good health to be able to tolerate the surgery, have good oral hygiene, gingiva and oral mucosa should be suitable for implant placement, and their cooperation should be provided. Any systemic problem, regularly use of painkillers or sedatives or steroid drugs, implantation's failure, history of surgery in the implant area or untreated periodontal disease, patient's drug misuse, severe bruxism and clenching, active infection in the desired area for implant placement will exclude the patient from the study.

Intervention groups

The implant on one side of the jaw will be placed immediately and the implant on the contralateral side will be placed delayed, and postoperative pain will be checked after each surgery.

Main outcome variables

The amount of postoperative pain, bleeding and swelling

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20220730055579N1**

Registration date: **2022-08-06, 1401/05/15**

Registration timing: **prospective**

Last update: **2022-08-06, 1401/05/15**

Update count: **0**

Registration date

2022-08-06, 1401/05/15

Registrant information

Name

Seyed Vahid Dehnad

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 23 3345 2181

Email address

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-08-23, 1401/06/01

Expected recruitment end date

2023-03-11, 1401/12/20

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of Postoperative Pain in Immediate Dental Implantation and Delayed Dental Implantation for Patients in need of Dental Implantation

Public title

Comparison of Postoperative Pain in Immediate Dental Implantation and Delayed Dental Implantation

Purpose

Supportive

Inclusion/Exclusion criteria**Inclusion criteria:**

Having two contralateral teeth on each side of the jaw that need to be replaced with an implant, one tooth should be extracted and the bone in that area should be repaired, but the tooth on the other side must be present so the implant can be placed immediately after extraction. There should be a gap of less than 2mm to place the immediate implant in the socket of the patient's extracted tooth. The patient must be in good health to be able to tolerate the surgery. The patient must have good oral hygiene. Gingiva and oral mucosa should be suitable for implantation. Appropriate cooperation of the patient should be provided.

Exclusion criteria:**Age**

From **17 years** old to **60 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Outcome assessor

Sample size

Target sample size: **20**

More than 1 sample in each individual

Number of samples in each individual: **2**

In each patient who enters the study, 2 contralateral teeth on each side of one jaw will be studied.

Randomization (investigator's opinion)

Randomized

Randomization description

Patients are divided into two groups using blocks of six prepared by statistical software: in the first group, the first surgery is performed on the right side of the jaw, and in the second group, the first surgery is performed on the left side of the jaw. All surgeries will be performed by a maxillofacial surgeon in a room with an assistant. The type of implant will be chosen randomly in the first surgery.

Blinding (investigator's opinion)

Single blinded

Blinding description

The outcome assessor (pain as the primary outcome in addition to bleeding and swelling) will be blinded to the method of implant placement.

Placebo

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Ethics committee of Semnan University of Medical Sciences

Street address

Headquarter of Semnan University of Medical Sciences and Health Services, Bassij Blvd

City

Semnan

Province

Semnan

Postal code

3514799442

Approval date

2022-07-25, 1401/05/03

Ethics committee reference number

IR.SEMUMS.REC.1401.131

Health conditions studied**1****Description of health condition studied**

Postoperative Pain after Dental Implantation

ICD-10 code**ICD-10 code description****2****Description of health condition studied**

Postoperative Bleeding after Dental Implantation

ICD-10 code**ICD-10 code description****3****Description of health condition studied**

Postoperative swelling after Dental Implantation

ICD-10 code

R22.9

ICD-10 code description

Localized swelling, mass and lump, unspecified

4**Description of health condition studied**

Delayed Dental Implantation

ICD-10 code**ICD-10 code description**

5

Description of health condition studied

Immediate Dental Implantation

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Postoperative pain after dental Implantation

Timepoint

12 & 24 hours and 3 & 7 days after implantation surgery

Method of measurement

Visual Analogue Scale

Secondary outcomes

1

Description

Postoperative Swelling after Dental Implantation

Timepoint

12 & 24 hours and 3 & 7 days after surgery

Method of measurement

With use of a ruler and a thread which will be recorded in a questionnaire.

2

Description

Postoperative Bleeding after Dental Implantation

Timepoint

12 & 24 hours and 3 & 7 days after surgery

Method of measurement

questionnaire

Intervention groups

1

Description

Intervention group: Immediate Dental Implantation

Category

Treatment - Surgery

2

Description

Control group: Delayed Dental Implantation

Category

Treatment - Surgery

Recruitment centers

1

Recruitment center

Name of recruitment center

Semnan Dentistry Faculty

Full name of responsible person

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

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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

Semnan 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

Semnan University of Medical Sciences

Full name of responsible person

Seyed Vahid Dehnad

Position

Assistant professor

Latest degree

Specialist

Other areas of specialty/work

Dentistry

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Person responsible for scientific inquiries**Contact****Name of organization / entity**

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Latest degree

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Person responsible for updating data**Contact****Name of organization / entity**

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Position

Student

Latest degree

A Level or less

Other areas of specialty/work

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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