Clinical Trial Protocol
Iranian Registry of Clinical Trials

07 Nov 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
s.vahid.dehnad@semums.ac.ir

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
Seyed Vahid Dehnad
Street address
Dentistry Faculty of Semnan University of Medical Sciences, 17th Shahrivar Blvd.
City
Semnan
Province
Semnan
Postal code
94431-35187
Phone
+98 23 3345 2181
Email
s.vahid.dehnad@semums.ac.ir

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Semnan University of Medical Sciences
Full name of responsible person
Ava Nikbin
Street address
Dentistry Faculty of Semnan University of Medical Sciences, 17th Shahrivar Blvd.
City
Semnan
Province
Semnan
Postal code
94431-35187
Phone
+98 23 3332 4700
Email
nikbinava@yahoo.com
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
Street address
Dentistry faculty of Semnan University of Medical Sciences, 17 shahrivar blvd, Semnan
City
Semnan
Province
Semnan
Postal code
94431-35187
Phone
+98 23 3345 2181
Fax
Email
s.vahid.dehnad@semums.ac.ir

Person responsible for scientific 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
Street address
Dentistry faculty of Semnan University of Medical Sciences, 17 shahrivar blvd, Semnan
City
Semnan
Province
Semnan
Postal code
94431-35187
Phone
+98 23 3345 2181
Fax
Email
s.vahid.dehnad@semums.ac.ir

Person responsible for updating data

Contact
Name of organization / entity
Semnan University of Medical Sciences
Full name of responsible person
Maede Mahdian
Position
Student
Latest degree
A Level or less
Other areas of specialty/work
Dentistry
Street address
Dentistry faculty of Semnan University of Medical Sciences, 17th Shahrivar Blvd.
City
Semnan
Province
Semnan
Postal code
94431-35187
Phone
+98 23 3332 4700
Email
maedemahdian78@gmail.com

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