Clinical Trial Protocol
Iranian Registry of Clinical Trials

16 Sep 2026

Clinical Evaluation of Working Length Determination by Electronic Apex-Locator or Radiography on Adequacy of Final Working Length

Protocol summary

Summary

The aim of this study is to compare the adequacy of working length in root canal therapies in which length determination is done by one of these two methods; radiographic or electronic measurement. Inclusion criteria are need for Endodontic treatment and age of 20-65 years. Exclusion criteria are open apexes and blocked canals. Sample size is 280 canals from all types of tooth selected from all patients admitting to endodontic speciality clinic. Patients will be randomly allocated to group A, in which length determination will be done by Root ZX electronic apex locator, and group B, in which length determination will be done by conventional radiography. The primary outcome is adequacy of length which will be assessed after completing treatment by two endodontists blinded to group allocation by evaluating final and master cone radiographies. Adequacy of length is graded by this classification: short (tip of gutta is shorter than 2mm from the apex), adequate (between 0-2 mm of the apex), and over (obturation material is extended over the apex).

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT138803121991N1**
Registration date: **2009-06-30, 1388/04/09**
Registration timing: **registered_while_recruiting**

Last update:
Update count: **0**

Registration date

2009-06-30, 1388/04/09

Registrant information

Name

Seyed Javad Anvar

Name of organization / entity

Shiraz University of Medical Sciences- Dental School

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Iran (Islamic Republic of)

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Recruitment status

Recruitment complete

Funding source

Shiraz Univesity of Medical Sciences

Expected recruitment start date

2009-06-10, 1388/03/20

Expected recruitment end date

2009-07-11, 1388/04/20

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Clinical Evaluation of Working Length Determination by Electronic Apex-Locator or Radiography on Adequacy of Final Working Length

Public title

Clinical Evaluation of Working Length Determination by Electronic Apex-Locator or Radiography on Adequacy of Final Working Length

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion Criteria: All the patients who are referred for Root Canal Therapy Exclusion Criteria: Blocked Canals, Open Apexes

Age

From **20 years** old to **65 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **172**

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Single blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

1

Registry name

ClinicalTrials.gov

Secondary trial Id

NCT00901810

Registration date

2009-05-12, 1388/02/22

Ethics committees

1

Ethics committee

Name of ethics committee

Shiraz University of Medical Sciences, Research Affairs Management

Street address

Zand Ave.

City

Shiraz

Postal code

Approval date

1388-03-15, 769/01/-734

Ethics committee reference number

4492

Health conditions studied

1

Description of health condition studied

Root Canal Therapy

ICD-10 code

K04

ICD-10 code description

Diseases of pulp and periapical tissues

Primary outcomes

1

Description

Adequacy of final working length

Timepoint

Only one time after finishing Root Canal Therapy

Method of measurement

Evaulation of length adequacy of Master Cone Radiography

Secondary outcomes

1

Description

Length adequacy of Obturation

Timepoint

Once after finishing Obturation

Method of measurement

Evaluation of length adequacy in final radiography

Intervention groups

1

Description

3rd generation Apex locator in the intervention group

Category

Diagnosis

2

Description

radiographic length measurement in control group

Category

Diagnosis

Recruitment centers

1

Recruitment center

Name of recruitment center

Shiraz Dental School

Full name of responsible person

Street address

City

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Shiraz Dental School

Full name of responsible person

Dr. Shohre Ravanshad

Street address

Ghasrodasht ave.

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Shiraz
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Shiraz Dental School
Proportion provided by this source
100
Public or private sector
empty
Domestic or foreign origin
empty
Category of foreign source of funding
empty
Country of origin
Type of organization providing the funding
empty

Person responsible for general inquiries

Contact
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Sharing plan

Deidentified Individual Participant Data Set (IPD)
empty
Study Protocol
empty
Statistical Analysis Plan
empty
Informed Consent Form
empty
Clinical Study Report
empty
Analytic Code
empty
Data Dictionary
empty