

Clinical Trial Protocol

Iranian Registry of Clinical Trials

16 Sep 2026

Comparison of Dimensional changes of upper airway before and after rapid maxillary expansion in children with maxillary constriction evaluated with cone beam computed tomography

Protocol summary

Summary

Objectives: The aim of this study is to evaluate dimensional changes of upper airway after rapid maxillary expansion via CBCT. Design: stage 2 trial. setting and conduct: 15 patients referring to Orthodontic department of khorasegan university requiring rapid maxillary expansion due to maxillary transverse deficiency are selected and treated with Hyrax appliances with rapid activation. CBCT images of the patients will be obtained before and 4 months after the Rapid Maxillary Expansion and upper Airway volume, nasal transverse dimensions, angular and distance landmarks will be measured before and 4 months after the treatment. Participants including major eligibility criteria: Patients with 10 to 15 years old who needs maxillary expansion due to maxillary width deficiency. Intervention: CBCT images before and 4 month after treatment. Main outcom measures: Increase of maxillary width followed by upper airway changes.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2014070818404N1**

Registration date: **2014-10-19, 1393/07/27**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2014-10-19, 1393/07/27

Registrant information

Name

Sepideh Dadgar

Name of organization / entity

Azad university of Khorasegan

Country

Iran (Islamic Republic of)

Phone

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Recruitment status

Recruitment complete

Funding source

investigator

Expected recruitment start date

2014-02-20, 1392/12/01

Expected recruitment end date

2014-04-19, 1393/01/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of Dimensional changes of upper airway before and after rapid maxillary expansion in children with maxillary constriction evaluated with cone beam computed tomography

Public title

Evaluation of Dimensional changes of upper airway after rapid maxillary expansion

Purpose

Health service research

Inclusion/Exclusion criteria

Patients with 10 to 15 years old who needs maxillary expansion due to maxillary width deficiency.

Age

From **10 years** old to **15 years** old

Gender

Both

Phase

2-3

Groups that have been masked

No information

Sample size

Target sample size: 15

Randomization (investigator's opinion)

N/A

Randomization description**Blinding (investigator's opinion)**

Not blinded

Blinding description**Placebo**

Not used

Assignment

Single

Other design features**Secondary Ids**

empty

Ethics committees1**Ethics committee****Name of ethics committee**

Ethical committee of Isfahan University Of Medical Sciences

Street address

Hezar Jirib street

City

Isfahan

Postal code

81745-313

Approval date

2015-02-20, 1393/12/01

Ethics committee reference number

493010

Health conditions studied1**Description of health condition studied**

Maxillary constriction

ICD-10 code**ICD-10 code description****Primary outcomes**1**Description**

palatal width

Timepoint

before and 4 month after rapid maxillary expansion

Method of measurement

cone beam computed tomography

Secondary outcomes1**Description**

upper airway volume

Timepoint

before and 4 month after rapid maxillary expansion

Method of measurement

cone beam computed tomography

Intervention groups1**Description**

2 radiographic images taken before and 4 month after treatment taken with CBCT technique

Category

Diagnosis

Recruitment centers1**Recruitment center****Name of recruitment center**

Orthodontic department of dental faculty of Khorasgan Azad university

Full name of responsible person

Sepideh Dadgar

Street address

East Jay street, Arghavanie boulevard

City

Isfahan

Sponsors / Funding sources1**Sponsor****Name of organization / entity**

Vice chancellor for research, Islamic Azad university of Khorasgan

Full name of responsible person

Vahid Esfahanian

Street address

East jay street, Arghavanieh boulevard

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Isfahan

Grant name**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

Title of funding source

Vice chancellor for research, Islamic Azad university of Khorasgan

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

Name of organization / entity

Islamic Azad university of Khorasgan

Full name of responsible person

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Position

asistant professor

Other areas of specialty/work

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Person responsible for updating data

Contact

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