

A study of the gums and orthodontic tooth movement after a connective tissue graft

Submission date 16/07/2022	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
Registration date 02/08/2022	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
Last Edited 02/08/2022	Condition category Oral Health	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

Plain English summary of protocol

Background and study aims

This study aims to measure the effects of using connective tissue grafts on orthodontic patients (with crowding in the lower front teeth) with a thin gingival (gum) biotype at risk of periodontal (gum) problems, compared to patients receiving only orthodontic treatment.

Who can participate?

Patients aged 15-40 years who want to align their teeth with orthodontic treatment and have a thin gingival biotype

What does the study involve?

Participants are randomly allocated to be treated with a connective tissue graft and orthodontic treatment (the experimental group) or orthodontic treatment only (the observational group).

What are the possible benefits and risks of participating?

Participants may benefit from increased gingival thickness and width of attached gingiva and faster orthodontic movement. The procedure doesn't involve any risks. It may prevent gingival problems during orthodontic treatment in patients with a thin gingival biotype.

Where is the study run from?

Damascus University (Syria)

When is the study starting and how long is it expected to run for?

May 2021 to December 2022

Who is funding the study?

Tishreen University (Syria)

Who is the main contact?

Dr Mai Souliman, maisouliman001@gmail.com

Contact information

Type(s)

Principal investigator

Contact name

Dr Mai Souliman

Contact details

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Additional identifiers**Clinical Trials Information System (CTIS)**

Nil known

ClinicalTrials.gov (NCT)

Nil known

Protocol serial number

M.S /513/

Study information**Scientific Title**

A study of gingival parameters and acceleration of orthodontic movement after implementation of connective tissue graft using the tunnel technique on patients with crowding in the lower anterior teeth and thin gingival biotype

Study objectives

The aim is to study gingival parameters and acceleration of orthodontic movement after implementation of connective tissue graft using the tunnel technique on patients with crowding in the lower anterior teeth and thin gingival biotype

Ethics approval required

Old ethics approval format

Ethics approval(s)

Approved 27/09/2021, Damascus University Rector (Baramkeh, Damascus, Syria; +966 (0)55 506 3806; email: not available), ref: 3391 MS

Study design

Randomized controlled trial

Primary study design

Interventional

Study type(s)

Treatment

Health condition(s) or problem(s) studied

Gingival diseases in patients with thin gingival biotype and treated by orthodontics

Interventions

This study is a randomized controlled trial. Patients are randomly selected according to their order of arrival, and the odd numbers are only treated by orthodontics. The even numbers have braces installed then the connective tissue graft (tunnel technique) will be performed. After 1 week the suture will be removed and the wire added to start the orthodontic treatment.

The duration of treatment is 2-3 weeks (to test and select the appropriate patient, set up the braces then implement the connective tissue graft) and the follow-up is during the orthodontic treatment which ranges between 4-6 months.

Intervention Type

Procedure/Surgery

Primary outcome(s)

1. Acceleration of the orthodontal movement assessed by Little's irregularity index before and every month after the connective tissue graft until the end of the orthodontic treatment
2. Gingival thickness assessed by an endodontic spreader before and after the treatment
3. Width of the attached gingiva assessed by William's probe before and after the treatment

Key secondary outcome(s)

Gingival parameters measured using the root coverage esthetic score (RES) before and after the treatment:

1. GM (gingival margin): zero points = failure of root coverage (gingival margin apical or equal to the baseline recession); 3 points = partial root coverage; 6 points = complete root cover
2. MTC (marginal tissue contour): zero points = irregular gingival margin (does not follow the CEJ); 1 point = proper marginal contour/scalloped gingival margin (follows the CEJ)
3. STT (soft tissue texture): zero points = scar formation and/or keloid-like appearance; 1 point = absence of scar or keloid formation
4. MGJ (mucogingival junction): zero points = MGJ not aligned with the MGJ of adjacent teeth; 1 point = MGJ aligned with the MGJ of adjacent teeth

Completion date

01/12/2022

Eligibility

Key inclusion criteria

1. Aged between 15-40 years old
2. Crowding in the lower anterior teeth (4-6 mm)
3. Thin gingival biotype (less than 1 mm)
4. Non-smoking
5. No general diseases
6. Good oral hygiene
7. No problem with gingival recession

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Mixed

Sex

All

Key exclusion criteria

1. Children (under 15 years old) and old age
2. Crowding in the lower anterior teeth (more than 6 mm)
3. Thick gingival biotype
4. Smoking
5. General diseases
6. Bad oral hygiene
7. Periodontitis

Date of first enrolment

05/11/2021

Date of final enrolment

31/08/2022

Locations**Countries of recruitment**

Syria

Study participating centre

Damascus University

Periodontology Department

Faculty of Dentistry

Mazzeah Highway

Damascus

Syria

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Sponsor information**Organisation**

Tishreen University

ROR

<https://ror.org/04nqts970>

Funder(s)

Funder type

University/education

Funder Name

Tishreen University

Alternative Name(s)

October University, Université Tichrine, , TU

Funding Body Type

Government organisation

Funding Body Subtype

Universities (academic only)

Location

Syria

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are/will be available upon request from Dr Mai Eissa Souliman (maisouliman001@gmail.com). The data will become available in 2023.

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes