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Treating facial scars with polydioxanone threads

Submission date	Recruitment status	[_] Prospectively registered
09/11/2025	No longer recruiting	[_] Protocol
Registration date	**Overall study status**	[_] Statistical analysis plan
12/11/2025	Completed	[X] Results
Last Edited	**Condition category**	[_] Individual participant data
12/11/2025	Oral Health	

Plain English summary of protocol
Background and study aims
This study looks at a new way to treat scars using a special type of thread placed under the skin. The aim is to improve the appearance of scars by gently supporting the skin from underneath. Researchers want to understand how well this method works and how safe it is for patients.

Who can participate?
Patients aged 18 - 40 years with a facial scar of at least 2 cm.

What does the study involve?
Participants first have their scar examined and photographed. They are given full details about the procedure, possible risks, and follow-up appointments. During the procedure, the skin is cleaned and numbed. Then, fine threads are gently placed under the scar using a special needle. After the procedure, participants are given instructions to help with healing, such as using ice packs, avoiding facial movement, and not applying creams for a few days.

What are the possible benefits and risks of participating?
The potential benefit is an improvement in the appearance of the scar. Risks may include discomfort, swelling, or complications related to the procedure, although these are expected to be minimal. Pain relief is available if needed.

Where is the study run from?
Damascus University (Syria)

When is the study starting and how long is it expected to run for?
August 2021 to January 2024

Who is funding the study?
Damascus University (Syria)

Who is the main contact?
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Contact information

Type(s)
Public, Scientific, Principal investigator

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Additional identifiers

Clinical Trials Information System (CTIS)
Nil known

ClinicalTrials.gov (NCT)
Nil known

Protocol serial number
Nil known

Study information

Scientific Title
Treating facial scars with polydioxanone threads

Study objectives
Polydioxanone Threads efficacy in facial scar improvement

Ethics approval required
Ethics approval required

Ethics approval(s)
approved 30/08/2021, Local Research Ethics Committee of the Faculty of Dentistry (Damascus University, Damascus, -, Syria; +963 (0)1133923192; ap.srd@damascusuniverity.edu.sy), ref: DN-020524-13-H14

Study design
Interventional prospective non randomized

Primary study design
Interventional

Study type(s)
Efficacy, Treatment

Health condition(s) or problem(s) studied
Facial scars

Interventions
At preoperative phase, an examination of the surgical site was conducted to assess any abnormalities, determining the dimensions of the scar, identifying its cause and duration since onset, as well as reviewing the patient's previous scar treatment history. Based on the aforementioned clinical diagnostic data, eligible patients were enrolled according to the inclusion criteria of the study. Each patient was provided with information about the study, the surgical procedure, potential complications, and the specified follow-up appointments. Informed consent was obtained for the surgical procedure, and photographs of the patient were taken before the procedure to evaluate the scar.
At surgical phase, the skin sterilization at the surgical site was performed using 4% povidone iodine solution, followed by the skin anesthesia, which achieved with 20% benzocaine typical anesthetic. Local anesthesia at the surgical site was also administered through the injection of 2% lidocaine containing 1:80,000 epinephrine along the edges of the scar. Using an 18-gauge needle, a point of entry was created at the beginning of the scar, and this needle was inserted along the length of the scar to its end, creating a pathway for inserting the needle carrying polydioxanone threads. The needles carrying the threads (with non-working heads) and loaded with 14 threads were then inserted. Polydioxanone threads (BeauMed, Hydra Multi, Korea) measuring 50 mm for the thread and 38 mm for the needle were used. These threads were smooth and had a non-working head needle containing 14 threads made of polydioxanone size 0-7, with a core thread size of 0-5. The subcutaneous layer was the targeted layer for placing the threads, the cannula is inserted, and with gentle pressure applied by the left hand on the scar, the cannula (needle carrying the threads) is smoothly removed, leaving the threads in place under the skin and the excess portion of the threads is trimmed.
At post-operative phase, the patient is given the following instructions: Apply ice packs to the scar for 10 minutes, limit facial movement for 24 hours, and avoid facial creams or cosmetics for 48 hours. Refrain from facial pulling or massaging for two weeks and avoid strenuous exercise for three days. The patient is advised to take pain medication only when necessary if experiencing discomfort.

Intervention Type
Procedure/Surgery

Primary outcome(s)
1. The Patient and Observer Scar Assessment Scale at (baseline, after a month, after six months)
2. Goodman & Baron Scar Scale at (baseline, after a month, after six months)
3. Global Aesthetic Improvement Scale at (baseline, after a month, after six months)
4. Patient Satisfaction at (after six months)

Key secondary outcome(s))
There are no secondary outcome measures

Completion date
30/01/2024

Eligibility

Key inclusion criteria

1. Linear atrophic facial scars resulting from previous surgical procedures, or prior accidents, with scar lengths of at least 2 cm
2. Ages ranging from 18 to 40 years
3. Scars should be at least 6 months old
4. Patients should be capable of adhering to the research protocol and completing follow-up sessions

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Upper age limit
40 years

Sex
All

Total final enrolment
20

Key exclusion criteria
1. Surgical site infection during follow-up periods
2. Patient's non-compliance with follow-ups

Date of first enrolment
30/01/2022

Date of final enrolment
30/01/2023

Locations

Countries of recruitment
Syria

Study participating centre
Faculty of Dentistry/ Damascus University
Almazzeh
Damascus
Syria
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Sponsor information

Organisation
Damascus University

ROR
https://ror.org/03m098d13

Funder(s)

Funder type
University/education

Funder Name
Damascus University

Alternative Name(s)
University of Damascus, , DU

Funding Body Type
Government organisation

Funding Body Subtype
Universities (academic only)

Location
Syria

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Data sharing statement to be made available at a later date

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		11/02/2025	10/11/2025	Yes	No