

Using skin glue versus stitches to close surgical wounds in bone tumor surgery

Submission date 03/05/2026	Recruitment status Recruiting	☐ Prospectively registered ☐ Protocol
Registration date 27/10/2026	Overall study status Ongoing	☐ Statistical analysis plan ☐ Results
Last Edited 23/10/2026	Condition category Surgery	☐ Individual participant data ☒ Record updated in last year

Plain English summary of protocol

Background and study aims

People having surgery for bone or muscle tumours can sometimes develop problems with wound healing, such as infection or the wound opening up. Surgeons usually close the skin with stitches, but medical skin glue is also used in some types of surgery. This study aims to find out whether adding skin glue to standard stitches leads to fewer wound problems than stitches alone in people having surgery for musculoskeletal tumours.

Who can participate?

People of any age who are having surgery for a bone or soft tissue tumour may be able to take part. This includes people with primary bone tumours, bone spread from cancer, or soft tissue tumours. People cannot take part if they have an infection at the surgery site, need complex wound closure such as skin grafts or flaps, have poor skin condition at the incision site, or are unlikely to attend follow-up appointments.

What does the study involve?

Participants will be randomly put into one of two groups. One group will have their skin closed with standard stitches plus medical skin glue. The other group will have stitches only. Both methods are routinely used in surgery. The operation itself will be the same as planned, and only the method of skin closure will differ. After surgery, participants will attend follow-up visits so the surgical wound can be checked for infection or other problems for up to 3 months.

What are the possible benefits and risks of participating?

Participants may or may not benefit directly from taking part. The use of skin glue may reduce the risk of wound infection or help the wound heal better, but this is not guaranteed. Both stitches and skin glue are commonly used and considered safe. Possible risks include wound infection, the wound opening, skin irritation, or the need for further treatment, which can happen regardless of which closure method is used.

Where is the study run from?

The study is being run at Sultan Qaboos University Hospital in Muscat, Oman.

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

The study started recruiting participants in January 2026 and is expected to finish in March 2027.

Who is funding the study?

Sultan Qaboos University Hospital (Oman).

Who is the main contact?

Dr Omar Al mahrouqi, Department of Orthopaedic Surgery, Oman Medical Specialty Board, mahruqiomr@gmail.com

Contact information

Type(s)

Scientific, Public, Principal investigator

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Study information

Scientific Title

Topical adhesives for skin closure in orthopaedic oncology: a randomized controlled trial

Acronym

TAD-SCOT

Study objectives

Ethics approval required

Ethics approval required

Ethics approval(s)

Approved 18/10/2026, Medical Research Ethics Committee (Sultan Qaboos University, Muscat, 123, Oman; +968 24145949; no email provided), ref: SQU-EC\146/2026 MREC #4122

Primary study design

Interventional

Allocation

Randomized controlled trial

Masking

Blinded (masking used)

Control

Active

Assignment

Parallel

Purpose

Treatment

Study type(s)**Health condition(s) or problem(s) studied**

Surgical site infection (SSI), wound dehiscence, and postoperative wound complications in patients undergoing surgery for musculoskeletal tumors (orthopaedic oncology)

Interventions

Experimental Arm: Tissue Adhesive Augmented Closure

Type of tissue adhesive:

A topical cyanoacrylate-based tissue adhesive (2-octyl cyanoacrylate; Dermabond®, Ethicon, USA) will be used as an adjunct to standard layered closure. Dermabond is an FDA-approved external skin adhesive.

Application technique:

Following completion of deep and subcutaneous closure using standard techniques, the skin will be approximated using Monocryl sutures. Dermabond will be applied along the approximated skin edges for those participants in the dermabond group. The adhesive will be allowed to polymerize without manipulation, and standard mepore dressing will be applied. Furthermore, to avoid any applicant outlier bias, the application of dermabond will be done by the single senior surgeon.

Personnel applying the intervention:

The tissue adhesive will be applied by the single operating orthopaedic surgeon, following a standardized application protocol.

Control Arm: Conventional Skin Closure

Suture material:

Skin closure in the control group will be performed using absorbable monofilament sutures (Monocryl®, Ethicon).

Suture technique:

Skin closure will be achieved using continuous subcuticular suturing, without the use of topical adhesive. No staples or adjunctive closure materials will be applied in this group. standard mepore dressing will be finally applied.

Participants in all study arms will be followed for a total duration of 6 months postoperatively.

Eligible participants will be randomized in a 1:1 allocation ratio to either the experimental arm (Monocryl plus topical tissue adhesive) or the control arm (Monocryl alone). Randomization will be performed using a computer-generated random sequence to ensure allocation unpredictability. Block randomization with variable block sizes of 4 will be used to maintain balance between groups.

Intervention Type

Supplement

Primary outcome(s)

1. Surgical Site Infection (SSI) that requires medical and/or surgical intervention. Reintervention for Wound Problems: Includes unplanned return to theatre for wound complications, incision reopening, debridement, or any additional procedure required to manage wound complications measured using Yes/No, based on whether the patient develops a postoperative surgical site infection requiring medical and/or surgical intervention at 3 months

Key secondary outcome(s)**Completion date**

31/03/2027

Eligibility**Key inclusion criteria**

1. Age: No limitation for age at the time of surgery
2. Diagnosis: Patients undergoing surgery for musculoskeletal tumors, including: Primary bone tumors, Metastatic bone disease, Primary soft-tissue tumors

Healthy volunteers allowed

No

Age group

All

Lower age limit

0 Years

Upper age limit

100 Years

Sex

All

Total final enrolment

0

Key exclusion criteria

1. Active infection: Evidence of active infection at or near the operative site at the time of surgery, including skin, soft tissue, or bone infection
2. Non standard wound closure: Procedures requiring flap coverage, skin grafting, or negative

pressure wound therapy

3. Poor skin condition at the incision site: Significant dermatologic disease, compromised skin integrity, or prior scarring at the planned incision site that may independently affect wound healing or cosmetic assessment

4. Inability to complete follow-up: Anticipated inability to attend scheduled postoperative wound assessments during the defined follow-up period

Date of first enrolment

31/01/2026

Date of final enrolment

31/01/2027

Locations

Countries of recruitment

Oman

Sponsor information

Organisation

Sultan Qaboos University Hospital

ROR

<https://ror.org/049xx5c95>

Funder(s)

Funder type

Funder Name

Sultan Qaboos University Hospital

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Not expected to be made available