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Comparison of the effect of spinal erector plane block versus preoperatively extrapleural inserted catheter in postoperative pain control in mini-invasive cardiac surgery

Submission date
28/02/2026

Recruitment status
Recruiting

Registration date
14/04/2026

Overall study status
Ongoing

Last Edited
14/04/2026

Condition category
Signs and Symptoms

[_] Prospectively registered
[X] Protocol
[_] Statistical analysis plan
[_] Results
[_] Individual participant data
[X] Record updated in last year

Plain English summary of protocol
Plain English summary of protocol not provided at time of registration

Contact information

Type(s)
Principal investigator, Scientific, Public

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Additional identifiers

Study information

Scientific Title
Efficacy of erector spinae plane block versus extrapleural catheter analgesia for postoperative pain control in minimally invasive cardiac surgery

Study objectives
The main study objective is to compare postoperative pain between two groups of patients treated with two different types of analgesia

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 19/02/2026, Etická komise VFN Praha (Na Bojišti 1, Praha, 128 08, Czech Republic; +420 224964131; eticka.komise@vfn.cz), ref: 199/25 S-IV

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
Acute postoperative pain following minimally invasive cardiac surgery

Interventions
Randomisation is performed using a computer-generated random allocation sequence with permuted blocks of variable size (4 and 8). Allocation concealment is ensured using sequentially numbered, opaque, sealed envelopes prepared according to the randomisation list. Envelopes are opened only after eligibility confirmation and written informed consent. Participants and outcome assessors are blinded to treatment allocation.

Enrolled patients will be randomly assigned to either the erector spinae plane block (ESPB) group or the extrapleural catheter (EPC) group. In the ESPB group, an ultrasound-guided catheter will be inserted preoperatively in the sitting position between the transverse process of the fifth thoracic vertebra and the erector spinae muscle. In the EPC group, an extrapleural catheter will be inserted by the surgeon under direct vision immediately before wound closure.

All patients will undergo standardized total intravenous anesthesia with propofol and remifentanil and left-sided double-lumen endotracheal intubation. Mechanical ventilation will be adjusted to maintain adequate oxygenation and ventilation. Surgical access will be through a left fifth intercostal incision with placement of a chest drain.

In both groups, 30 mL of 0.25% bupivacaine will be administered via the catheter before skin closure, followed by continuous infusion of 0.125% bupivacaine at 3–8 mL/h. Postoperative multimodal analgesia will include intravenous paracetamol and metamizole. Rescue analgesia will be provided with hydromorphone as needed. Pain scores, opioid-related adverse events, duration of intubation, intensive care unit stay, and total hospital length of stay will be recorded.

Intervention Type
Procedure/Surgery

Primary outcome(s)
1. Pain measured using a Numerical Rating Scale (NRS) at 6 hours postoperatively

Key secondary outcome(s)
1. pain score, opioid side effects, opioids and other pain killers doses, time to extubation, ICU stay, hospital stay measured using a Numerical Rating Scale (NRS) at the time of extubation, 18, 24 and 48 hours postoperatively

Completion date
31/01/2028

Eligibility

Key inclusion criteria
1. Patients aged between 18 and 80 years
2. Scheduled for mini-invasive direct coronary artery bypass (MIDCAB) via thoracotomy

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
18 Years

Upper age limit
80 Years

Sex
All

Total final enrolment
0

Key exclusion criteria

1. Body mass index less than 18 or greater than 30 kg/m2
2. Emergency or redo surgery
3. Contraindications to the use of regional blocks
4. Diagnosed psychiatric disorder
5. History of opioid addiction
6. With chronic or neuropathic pain
7. Patient refusal

Date of first enrolment
23/02/2026

Date of final enrolment
31/12/2027

Locations

Countries of recruitment
Czech Republic

Sponsor information

Organisation
Charles University

ROR
https://ror.org/024d6js02

Funder(s)

Funder type

Funder Name
Investigator initiated and funded

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not expected to be made available

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Other files			09/03/2026	No	No
Participant information sheet			09/03/2026	No	Yes
Protocol file	version 2		09/03/2026	No	No