Included:
- Meet the diagnostic criteria for knee osteoarthritis;
- Planned spinal anesthesia; American Society of Anesthesiologists (ASA) physical status I-II;
- Scheduled for unilateral total knee arthroplasty;
- Patients aged 50 ~ 80 years old.
- Willingness to give written informed consent and willingness to participate in and comply with the study.

Excluded:
- Unwillingness of the patient;
- Presence of neuropathic pain or sensory disorders in the leg to be operated on;
- Intolerance to the study drugs;
- Failure of spinal anesthesia;
- Previous major knee surgery, re-operation or trauma to the knee within the study period.

Enrollment

Randomized

N=214

Allocated to intervention continuous intra-articular infusion (n=107)

First 3 postoperative day Clinical assessment:
- Postoperative pain at 2, 6, 10, 18, 26, 34, 42, 50, 58, 64, and 72 h via visual analog scale.
- The frequency and total consumption of tramadol hydrochloride
- Active range of motion

Follow-Up

Allocated to intervention epidural infusion (n=107)

First 3 postoperative day Clinical assessment:
- Postoperative pain at 2, 6, 10, 18, 26, 34, 42, 50, 58, 64, and 72 h via visual analog scale.
- The frequency and total consumption of tramadol hydrochloride
- Active range of motion

Follow-Up

3-month and 6-month clinical assessment:
- Synovial fluid C-reactive protein, erythrocyte sedimentation rate,
- Synovial fluid culture, white blood cells count and polymorphonuclear cell percentage.
- Active range of motion

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3-month and 6-month clinical assessment:
- Synovial fluid C-reactive protein, erythrocyte sedimentation rate,
- Synovial fluid culture, white blood cells count and polymorphonuclear cell percentage.
- Active range of motion

Assess outcomes at baseline, postoperative pain, rescue analgesia active range of motion, periprosthetic joint infection marker.