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## Ultrasound-guided out-of-plane (OOP) adductor canal continuous catheter placement compared to in-plane (IP) placement in total knee arthroplasty: a randomized, single blinded, pilot clinical trial

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**Title:** Ultrasound-guided out-of-plane (OOP) adductor canal continuous catheter placement compared to in-plane (IP) placement in total knee arthroplasty: a randomized, single blinded, pilot clinical trial  
Abstract

**Background:** Adductor canal continuous catheters (ACCCs) have largely replaced femoral nerve continuous catheters for providing analgesia after total knee arthroplasty. Both have similar analgesic efficacy, but ACCCs preserve quadriceps strength and facilitate patient mobility more quickly. We hypothesized that placing the ACCC using an out-of-plane (OOP) technique would decrease pain scores and opioid use due to parallel alignment with the saphenous nerve when compared to the in-plane (IP) technique.

**Methods:** Sixty-nine patients undergoing total knee arthroplasty were randomized to either the IP or OOP technique for ultrasound-guided ACCC. The primary outcomes of the investigation were hospital length of stay, total opioid consumption, and average post-operative pain score. Secondary outcomes included total ondansetron consumption, total acetaminophen consumption, and the incidence of anti-emetic drug use.

**Results:** There were no significant differences between the IP and the OOP groups for any of the measured variables: hospital length of stay, pre-operative pain score, average post-operative pain score, total opioid consumption, total ondansetron consumption, total acetaminophen consumption, and the incidence of anti-emetic drug administration.

**Conclusion:** The OOP ACCC technique did not provide superior analgesia or decrease opioid consumption when compared to the IP ACCC technique. Both techniques can be used interchangeably for analgesia status-post TKA.

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