

The Use of Anterior Femoral Cutaneous Nerve Blocks in Total Knee Arthroplasty: A Quality Improvement Project

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Introduction

Problem: Many patients experience anterior distal knee pain following total knee arthroplasty (TKA), commonly associated with the anterior femoral cutaneous nerve (AFCN) distribution.

Current Practice:

- IV diazepam is used as first-line treatment to relieve muscle spasms.
- Opioids and rescue blocks are used for additional pain management.

Objective:

- Incorporate AFCN block into the preoperative nerve block protocol.

Hypothesis:

- We hypothesize that incorporating AFCN block will reduce the need for postoperative pain medications and interventions

Methods

Standard Analgesia Care:

- Femoral Triangle Block (FTB) and Injection between the Popliteal Artery and the Capsule of the Knee (IPACK) are administered preoperatively.

Intervention:

- AFCN block was added to the standard analgesia protocol.

Data Collection:

- A retrospective review of medical records for 105 patients who received the AFCN block as part of the protocol and 100 patients who did not receive the block

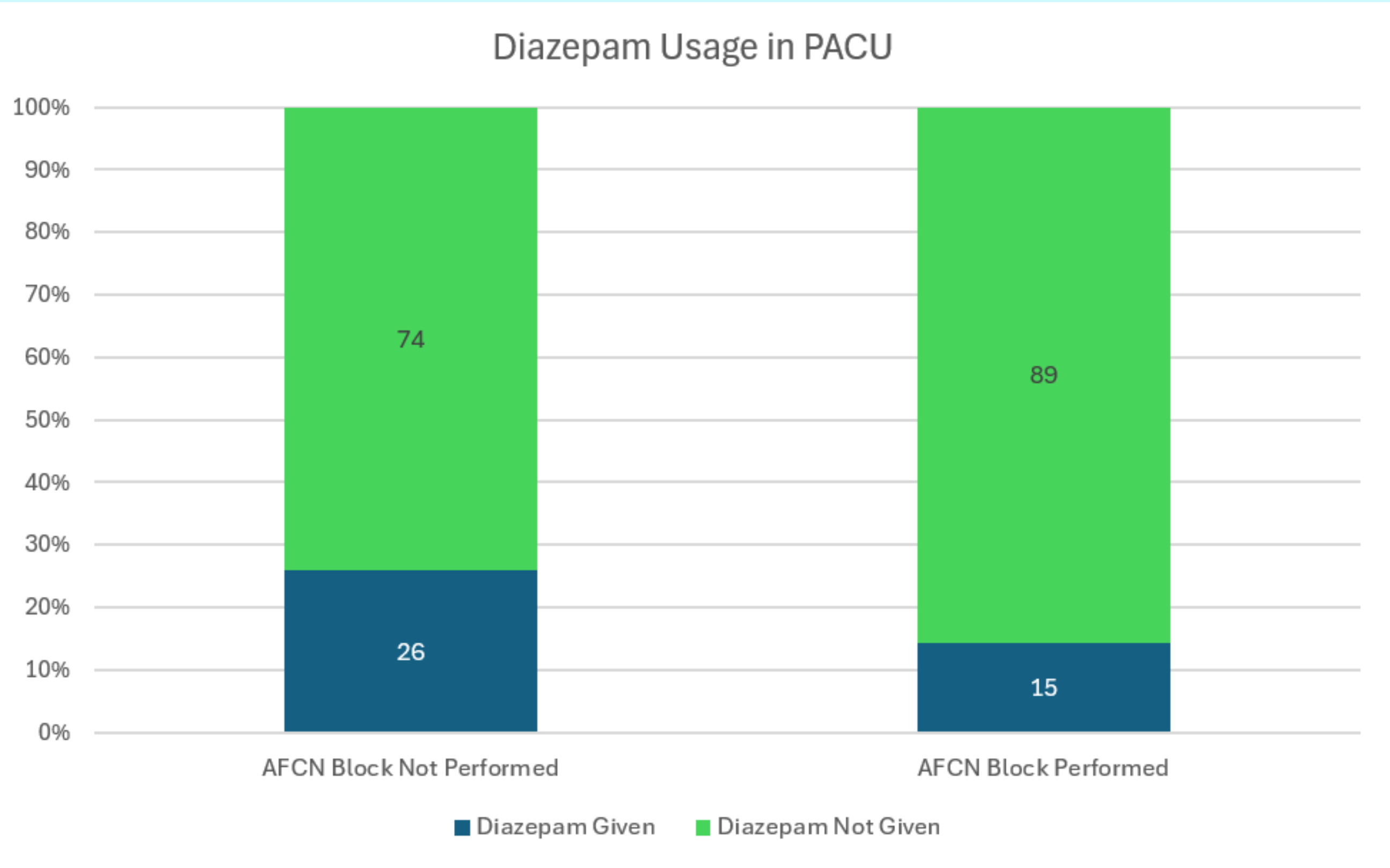
Exclusion Criteria:

- None of the patients were chronic opioid users.

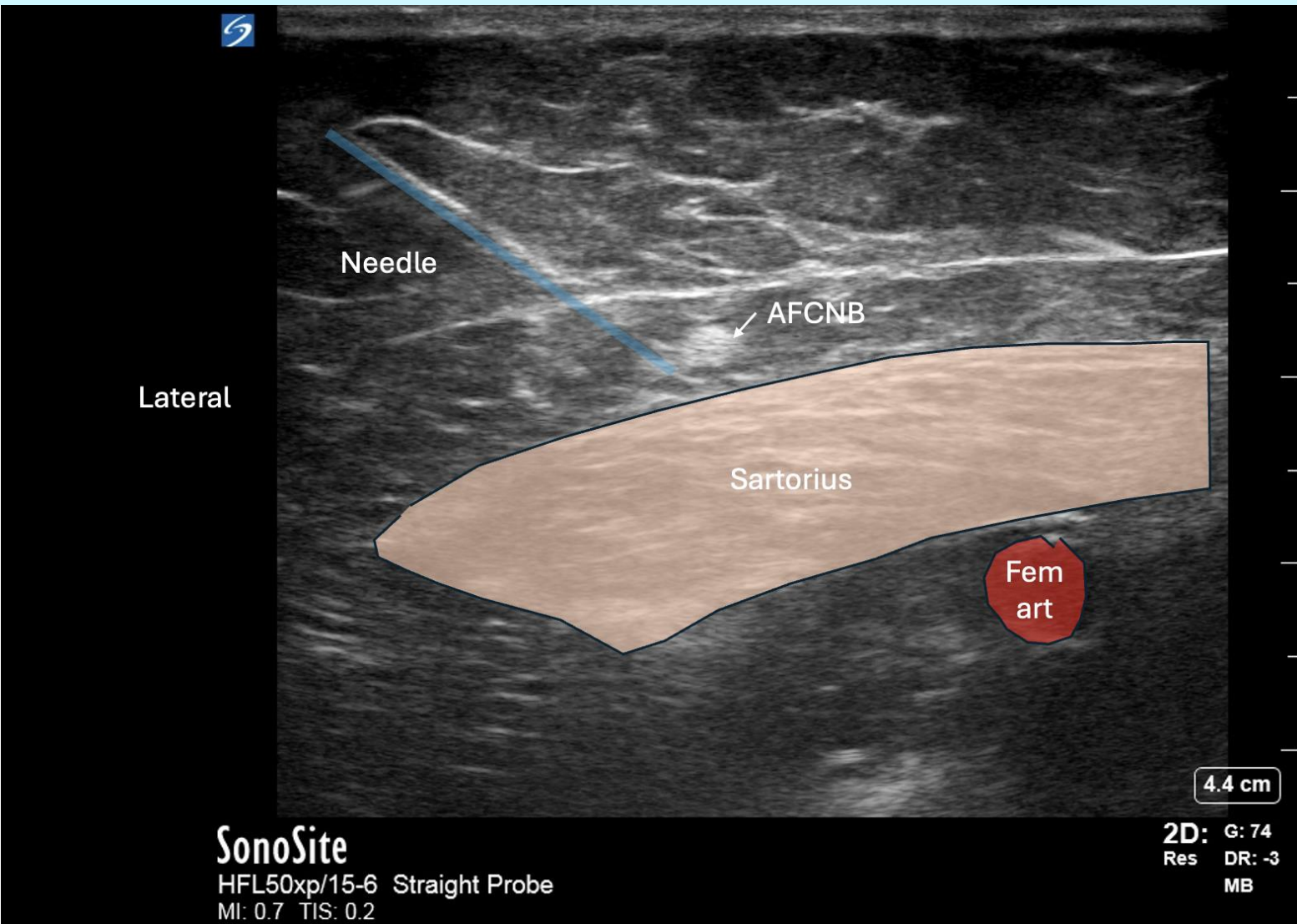
Primary Outcome:

- Postanesthesia care unit (PACU) diazepam use.

Key Findings



US images



Discussion

Key Findings:

- The addition of anterior femoral cutaneous nerve (AFCN) block to the total knee arthroplasty protocol **significantly reduced** the need for postoperative diazepam.

Literature Review:

- Evidence suggests that AFCN block provides more effective analgesia and reduces opioid requirements compared to femoral triangle block (FTB) after TKA, enhancing immediate post-op functional recovery.
- A single FTB injection lacks cutaneous anesthesia covering the anterior knee, which AFCN block addresses.

Recommendations for Practice:

- Continue incorporating AFCN blocks in the total knee protocol.
- Ongoing data collection is recommended to assess the continued effectiveness and potential for scaling this intervention.
- Formal IRB approval is pending for further research

References

- 1. Kampitak, W., Tanavalee, A., Tansatit, T., Ngarmukos, S., Songborassamee, N., & Vichainarong, C. (2021). The analgesic efficacy of anterior femoral cutaneous nerve block in combination with femoral triangle block in total knee arthroplasty: a randomized controlled trial. Korean journal of anesthesiology, 74(6), 496–505. <https://doi.org/10.4097/kja.21120>
- 2. Bjørn, S., Nielsen, T. D., Moriggl, B., Hoermann, R., & Bendtsen, T. F. (2019). Anesthesia of the anterior femoral cutaneous nerves for total knee arthroplasty incision: randomized volunteer trial. Regional anesthesia and pain medicine, rapm-2019-100904. Advance online publication. <https://doi.org/10.1136/rapm-2019-100904>