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Adductor Canal vs. Femoral Nerve Block in Anterior Cruciate Ligament Reconstruction: A Randomized Controlled Trial

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Objectives: Peripheral nerve blocks are commonly performed as a part of multimodal pain control regimens, especially for outpatient surgical procedures. Femoral nerve blocks (FNB) have been the traditional gold standard nerve block in the setting of ACL reconstruction; however, adductor canal blocks (ACB) have emerged as a promising alternative. While early findings show less quadriceps strength deficits following adductor canal blocks, results comparing analgesia from adductor canal nerve blockade to femoral nerve blockade are inconsistent. The purpose of this study was to compare adductor canal nerve block to femoral nerve block for pain control following ACL reconstruction.

Methods: This study was a prospective, single-blinded, randomized, controlled, parallel single-center trial. 77 adult patients receiving ACL reconstruction were enrolled between December 2015 and April 2016. All patients received either a traditional FNB or an ACB immediately prior to surgery. All patients were given a post-operative smartphone application to record medication usage, pain scores, hours of sleep, and time to straight leg raise for one week following ACL reconstruction.

Results: Of the 77 patients recruited, 64 patients were analyzed (83.1%). 13 patients were lost to follow-up. There were no statistically significant differences in post-operative pain, home medication use, recovery room time, or hours of sleep between the two study groups. Patients receiving an ACB had significantly shorter time to straight leg raise and reported greater satisfaction with acute post-operative pain control.

Conclusion: Adductor canal nerve blockade had similar analgesic outcomes, improved post-operative mobility, and greater patient satisfaction with pain control than femoral nerve blockade. Our study supports the use of adductor canal block as a viable alternative to femoral nerve block following ACL reconstruction.