A History and Evolution of the Adductor Canal Block

For Motor Sparing Block After Knee Surgery

1. **2007 - US guided Adductor Canal Block for the (Saphenous Nerve Only)**

Jens Krombach, M.D. Andrew T. Gray, M.D., Ph.D

***Sonography for Saphenous Nerve Block Near the Adductor Canal***

*Regional Anesthesia and Pain Medicine Vol. 32 No. 4 July–August 2007*

2. **2009 - First Report that US guided Adductor Canal Block produces “*sensory loss over the medial, anterior, and lateral aspects of the knee… without noticeable effects on the quadriceps muscle…we have successfully used US guided AC catheters for motor sparing analgesia after TKA and ACL”***

This was discovered after a patient reported numbness over “my whole knee” following US guided saphenous nerve block at the AC

 ***Adductor Canal Block: More Than Just the Saphenous Nerve***

JJ Davis M.D., TS Bond, M.D., JD Swenson, M.D.

*Regional Anesthesia and Pain Medicine Vol. 34 No. 6 Nov-Dec 2009*

**3. Problems with Traditional AC Block (perivascular injection)**

**Vascular Injury**

***Femoral Artery Dissection***

 *Vorobeinchik L , Abdallah F*

*Images in Anesthesiology*

*Anesthesiology June 2019*

**Pseudoaneurysm**

**Iatrogenic Pseudoaneurysm After Continuous Adductor Canal Block.**

Cappelleri G, Molinari P, Stanco A.

A A Case Rep. 2016 Nov 1;7(9):200-202

**Intravascular Injection**

**Local anesthetic systemic toxicity following adductor canal block**

Yehoshua Gleicher, Sharon Peacock

Reg Anesth Pain Med October 2019 Vol 44 No 10

**Hematoma Formation**

**Case Report of a Massive Thigh Hematoma after Adductor Canal Block in a Morbidly Obese Woman Anticoagulated with Apixaban.**

Koniuch KL, Harris B, Buys MJ, Meier AW.

Case Rep Anesthesiol. 2018 Aug 13;2018

**Quadriceps Weakness**

**Quadriceps Weakness After Single-Shot Adductor Canal Block: A Multivariate Analysis of 1,083 Primary Total Knee Arthroplasties**

Elliott J Yee , Zachary A Gapinski , Mary Ziemba-Davis , Mark Nielson , R Michael Meneghini

Journal of Bone and Joint Surgery, 2021 Jan 6;103(1):30-36

**Opioid- and Motor-sparing with Proximal, Mid-and Distal Locations for Adductor Canal Block in Anterior Cruciate Ligament Reconstruction: A Randomized Clinical Trial**

Abdallah FW, Mejia J, Prasad GA, Moga R, Chahal J, Theodoropulos J, Dwyer T, Brull R

Anesthesiology 2019 Sep;131(3):619-629

**The Effect of Local Anesthetic Volume Within the Adductor Canal on Quadriceps Femoris Function Evaluated by Electromyography: A Randomized, Observer- and Subject-Blinded, Placebo-Controlled Study in Volunteers.**

Grevstad U, Jæger P, Sørensen JK, Gottschau B, Ilfeld B, Ballegaard M, Hagelskjaer M, Dahl JB.

Anesth Analg. 2016 Aug;123(2):493-500

**4. The Simplified Adductor Canal Block - Why it Works, Safety Advantages**

**(Think about the innervation of the knee, not just the anatomy of the adductor canal)**

**Randomized controlled trial of a simplified adductor canal block performed for analgesia following total knee arthroplasty.**

Swenson JD, Pollard JE, Peters CL, Anderson MB, Pace NL.

Reg Anesth Pain Med. 2019 Jan 23:rapm-2018

**5. What About Catheters vs Single Injection?**

**Local Anesthetic-Induced Myotoxicity After Continuous Adductor Canal Block.**

Neal JM, Salinas FV, Choi DS.

Reg Anesth Pain Med. 2016 Nov/Dec;41(6):723-727

6. **What about Liposomal Bupivacaine?**

**Clinical Effectiveness of Liposomal Bupivacaine Administered by Infiltration or Peripheral Nerve Block to Treat Postoperative Pain.**

Ilfeld BM, Eisenach JC, Gabriel RA.

Anesthesiology. 2021 Feb 1;134(2):283-344

**Perineural Liposomal Bupivacaine Is Not Superior to Nonliposomal Bupivacaine for Peripheral Nerve Block Analgesia.**

Hussain N, Brull R, Sheehy B, Essandoh MK, Stahl DL, Weaver TE, Abdallah FW.

Anesthesiology. 2021 Feb 1;134(2):147-164

**Clinical Efficacy of Liposomal Bupivacaine: A Systematic Review of Prospective, Randomized Controlled Trials in Orthopaedic Surgery.**

Abildgaard JT, Chung AS, Tokish JM, Hattrup SJ.

JBJS Rev. 2019 Jul;7(7)