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Adductor Canal Block



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Disclosures

- None



Can J of Anesth. 2010;57:683-688

Objectives

- Review anatomy of adductor canal
- Follow evolution of adductor canal block
- Understand anatomic and practical factors that lead to optimal blockade of the femoral/saphenous

The Case for the Adductor Canal

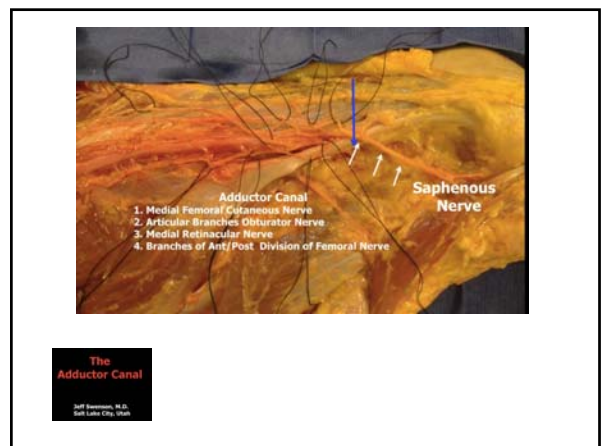
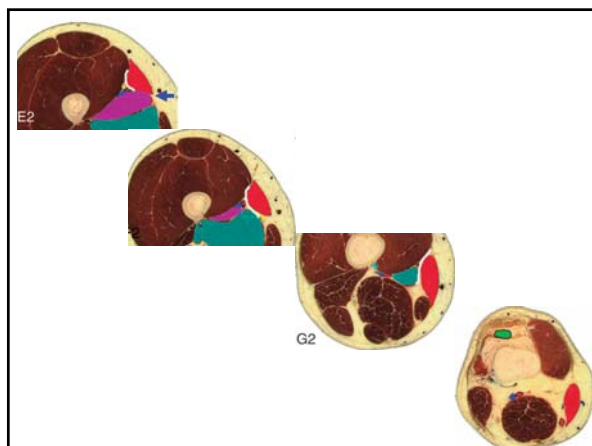
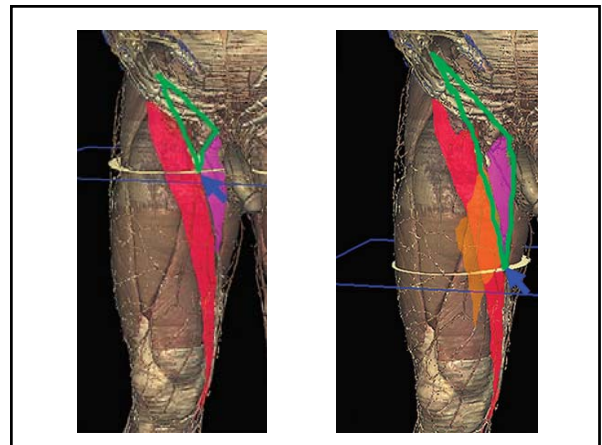
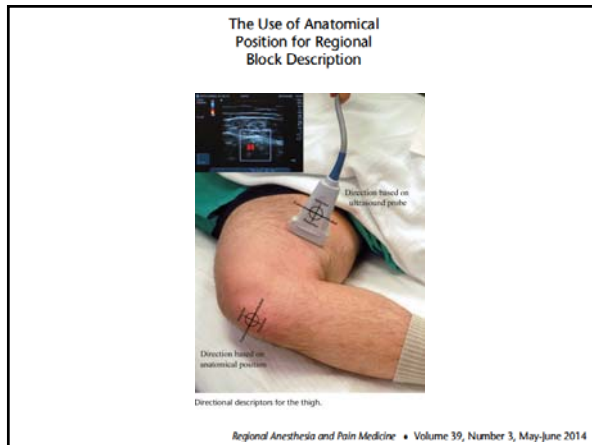
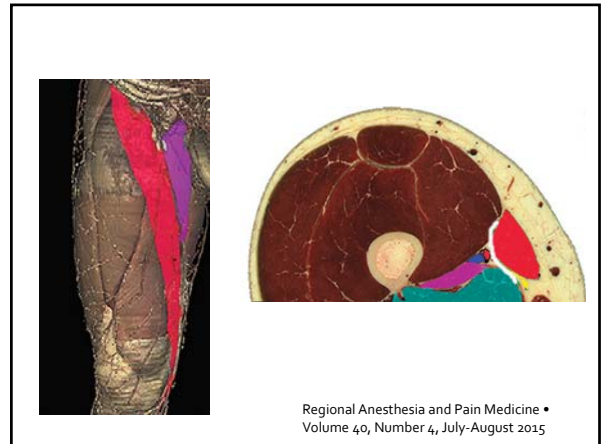
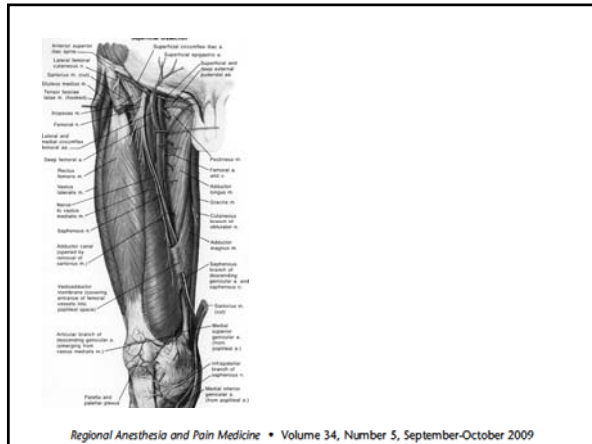
- Good Analgesia for TKA, ACL, medial malleolus
 - At UCH: has replaced inguinal crease for TKA, ACL and any distal saphenous blocks for Ankle/foot ORIF
- Vastly reduced Quad motor loss vs. inguinal crease
 - Fewer falls
 - Better participation in Physical Therapy PODo, POD1
 - Surgeons like them (relatively speaking)
- Reliable surgical block (w/pop-sciatic) for ORIF ankle
 - Likely prolonged local anesthetic exposure to the nerve, thanks to borders of adductor canal

History

- Saphenous nerve block has had a inconsistent success rate in the non ultrasound era
- Historical techniques include infiltration along tibial tuberosity in upper leg and adjacent to medial malleolus in distal leg
- Reported success rates for blind infiltration along anatomic path reported from 10-70%
- Improved success reported with nerve stimulation guided approaches despite being a pure sensory nerve

Anatomy

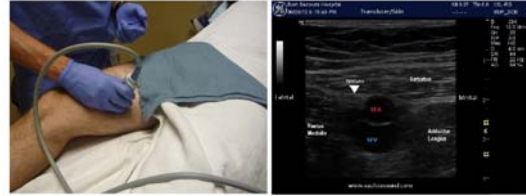
- Saphenous Nerve is a pure sensory branch from posterior division of the Femoral Nerve
- Courses beneath the Sartorius muscle and passes through the Adductor Canal in its entirety
- Exits in the distal portion of the adductor canal after piercing the Adductor membrane at the Adductor Hiatus
- After leaving the Adductor Canal passes between the Sartorius and Gracilis Muscles alongside the saphenous branch of the descending geniculate artery
- Travels along the Greater Saphenous Vein as it courses toward the lower leg and the area of the medial malleolus



Block approach

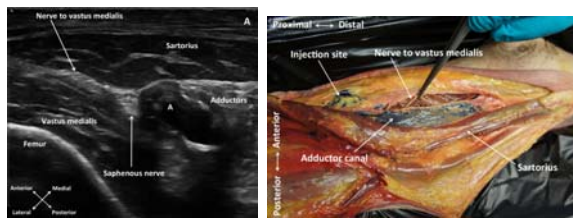
- **Position:** Supine, leg externally rotated
- **Probe placement:** half way between inguinal ligament and patellar tendon, transverse to femoral artery. 2-5cm deep.
 - See femur? You are too lateral, scan medial!
- **Landmark:** Superficial femoral artery
- **Needle placement:**
 - Recommend echogenic needle >5cm length
 - In plane – lateral to medial

Approach/View



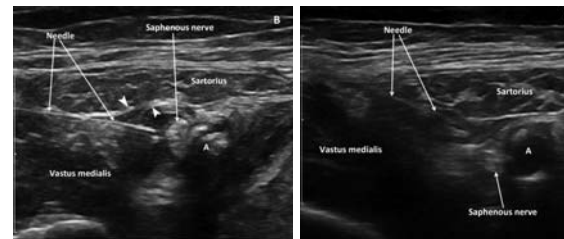
<http://www.vaulttrasound.com/wp-content/uploads/2012/03/adductor-landmark-and-US-image.jpg>

US Views



Acta Anaesthesiologica Scandinavica 59 (2015) 238–245

US views



Acta Anaesthesiologica Scandinavica 59 (2015) 238–245

Block approach, cont.

- **How do I know if the block will work??**
- Local anesthetic spread should push artery away and obscure contents of canal
- If sartorius is pushed up or vastus medialis is pushed away, you are still in the muscle plane!

Complications/Thoughts

- Cephalad spread is possible (weak quad!)
- Strong pressure on US probe may occlude veins ...don't put your needle in there!
- Frequent aspiration is important!
 - Consider epinephrine "test-dose" (75mcg in 30mL)
- Consider adjuncts, due to shorter duration
 - Clonidine (preservative-free) 100mcg
 - Dexamethasone (preservative-free) 4mg

Conclusion

- Adductor Canal Block is still in evolution
- Motor sparing effects seem to exist despite use of large volumes and proximal approaches

Three Pearls: Adductor Canal

- Less Quad Weakness
- US Probe Halfway between inguinal ligament and patella
- Local anesthetic spread should push artery away

