Lateral femoral cutaneous nerve block

Ultrasound has developed into a powerful tool for the visualization of peripheral nerves including very small nerves such as accessory and sural nerves. The LFCN can be located successfully, and local anesthetic solution distribution around the nerve can be observed with ultrasound guidance [1].

see
http://www.usra.ca/regional-anesthesia/specific-blocks/lower-limb/lateralfemoralcutaneousnerveblock.php

see https://www.nysora.com/ultrasound-guided-lateral-femoral-cutaneous-nerve-block

Nerve blockade of the lateral femoral cutaneous nerve provides some analgesia after hip surgery. However, knowledge is lacking about the extent of the cutaneous area anesthetized by established LFC nerve block techniques, as well as the success rate of anesthetic coverage of various surgical incisions. Nerve block techniques that rely on ultrasonographic identification of the LFC nerve distal to the inguinal ligament can be technically challenging. Furthermore, the branching of the LFC nerve is variable, and it is unknown if proximal LFC nerve branches are anesthetized using the current techniques. The primary aim of this study was to investigate a novel ultrasound-guided LFC nerve block technique based on injection into the fat-filled flat tunnel (FFFT), which is a duplicature of the fascia lata between the sartorius and the tensor fasciae latae muscle, in order to assess the success rate of anesthetizing the proximal LFC nerve branches and covering of the different surgical incisions used for hip surgery.

METHODS: First, a cadaveric study was conducted in order to identify an FFFT injection technique that would provide adequate injectate spread to the proximal LFC nerve branches. Second, a clinical study was conducted in a group of 20 healthy volunteers over 2 consecutive days. On trial day 1, successful complete anesthesia of the LFC nerve was defined by performing a suprainguinal fascia iliaca block bilaterally in each subject. On trial day 2, a triple-blind randomized controlled trial compared the effect of the novel ultrasound-guided LFC nerve block technique for bupivacaine versus placebo. The primary end point was the success rate of anesthesia of the proximal cutaneous area innervated by the LFC nerve for the FFFT injection with bupivacaine versus placebo.

RESULTS: Adequate spread of injectate to the proximal LFC nerve branches in cadavers was obtained by injecting 10 mL with dynamic needle-tip tracking in the FFFT. Application of this technique in the randomized controlled trial provided anesthesia of the lateral thigh with a success rate of 95% (95% confidence interval, 73.9%-99.8%) for the active side and 0% for placebo (P < 0.001). The proximal branches were anesthetized with a success rate of 68% (95% confidence interval, 43.4%-87.4%) on the active side. The proximal extent of the anesthetized cutaneous area was on average 7.9 cm distal to the greater trochanter.

This novel LFC nerve block technique is easy and quick and reliably produces anesthesia of the lateral thigh. The greater trochanter is rarely included in the area of anesthesia, which reduces the coverage of each specific surgical incision. The success rate of 68% in anesthetizing the proximal nerve branches must be further evaluated by future research [2].

Videos

<html><iframe width="560" height="315" src="https://www.youtube.com/embed/8WvP1X_mTs8" frameborder="0" allow="autoplay; encrypted-media" allowfullscreen></iframe></html>

[1)]

Kim JE, Lee SG, Kim EJ, Min BW, Ban JS, Lee JH. Ultrasound-guided Lateral Femoral Cutaneous Nerve Block in Meralgia Paresthetica. Korean J Pain. 2011 Jun;24(2):115-8. doi: 10.3344/kjp.2011.24.2.115. Epub 2011 Jun 3. PubMed PMID: 21716611; PubMed Central PMCID: PMC3111560.

[2)]

Nielsen TD, Moriggl B, Barckman J, Kølsen-Petersen JA, Søballe K, Børglum J, Bendtsen TF. The Lateral Femoral Cutaneous Nerve: Description of the Sensory Territory and a Novel Ultrasound-Guided Nerve Block Technique. Reg Anesth Pain Med. 2018 Jan 29. doi: 10.1097/AAP.0000000000000737. [Epub ahead of print] PubMed PMID: 29381568.

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