Case Report

Thigh abscess as a complication of continuous popliteal sciatic nerve block

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We present a case report of severe localized infection after continuous popliteal sciatic nerve block. The report highlights the importance of meticulous asepsis and possibly limiting the duration of catheter use.


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Continuous popliteal sciatic nerve block is an established technique for surgery of the foot and ankle. This technique is useful as it facilitates early patient discharge after lower limb surgery.¹ The main complications related to this technique are the occurrence of neurological injuries.² We report a case of thigh abscess complicating a continuous popliteal nerve block.

Case report

A male patient of 57 yr of age, ASA I, was admitted for foot surgery. Before anaesthesia, the patient was monitored using pulse oximeter, ECG and a non-invasive arterial pressure monitor. A popliteal catheter was inserted while maintaining full aseptic precautions; the anaesthetist ‘scrubbed up’ with aqueous chlorhexidine 4%, and wore a gown, cap, facemask and sterile gloves. The skin surface was prepared with alcoholic chlorexidine 0.5% and a sterile drape. Continuous popliteal nerve procedure was performed using the technique described by Vloka and colleagues.³ After local infiltration of the skin with lidocaine 1%, the catheter (Contiplex⁶/D) was inserted under guidance of electrical stimulation (Stimultex⁶ HNS 11) to identify sciatic nerve. The cannula was 55 mm in length with an internal diameter of 18 G. The catheter was placed at a depth of 2 cm and secured with a clear self-adhesive dressing. After a negative aspiration test, 20 ml of ropivacaine 0.2% was injected.

Postoperative analgesia was administered using a continuous popliteal infusion with ropivacaine 0.2% at an infusion rate of 7 ml h⁻¹ (infusor Baxter⁵ with a volume of 250 ml). The infusor had a bacterial filter included into the system and the number of bag changes was limited to three. Five days after surgery, the catheter was removed. The nurse observed an area of superficial inflammation at the site of catheter insertion; there was no fever or pain. Fifteen days after the catheter was removed, the patient complained of pain in the thigh with fever. He had an elevated leukocyte count and increased C-reactive protein. Ultrasonography revealed a thigh mass (Fig. 1) and the abscess was treated by surgery. Copious amounts of pus subsequently indicated methicillin-resistant *Staphylococcus aureus*. The infection was treated with a 1-month course of antibiotics (vancomycin) with complete recovery.

Discussion

Severe infections after peripheral nerve blocks have been observed only rarely. To our knowledge, the only reported infectious sequelae of such techniques are psoas abscess complicating femoral nerve block⁴ and localized infection after prolonged use of axillary catheter.⁵ The site of catheter insertion should be considered as it influences the rate of bacterial colonization; the bacterial colonization rate of continuous femoral nerve catheters may be as high as 57%,⁶ which is related to contamination from faecal or urinary organisms.

In contrast, two studies have demonstrated that catheters inserted via the popliteal route are associated with a very low rate of bacterial colonization; the bacterial colonization rate of continuous femoral nerve catheters may be as high as 57%,⁶ which is related to contamination from faecal or urinary organisms.

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The most common causative organism cultured from epidural or psoas abscess, it was not the most common organism isolated from peripheral analgesic catheters and it has been generally regarded as a pathogen of clinical significance. To our knowledge, this is the first case report to describe a severe infectious complication following a continuous popliteal nerve block. The abscess may have resulted from catheter colonization at the skin entry site and subsequently transmitted the infection from the skin to the thigh as previously suggested by Adam and co-workers for a psoas abscess complicating femoral nerve block. No risk factor for increased rate of infections such as diabetes mellitus or immunosuppression was present in this patient.

The duration of catheter use of 5 days in this case may also have played a role in the genesis of thigh abscess. In fact, this is the maximum duration which is reported in the literature. It is also possible that the longer the duration of catheter placement the greater the risk of high level of bacterial catheter colonization and consequently the risk of further infection as reported for central venous line catheters. However, no data are available to date regarding this type of a mechanism for peripheral catheters used for continuous analgesia.

In conclusion, serious complications may rarely occur during continuous popliteal sciatic nerve block for postoperative analgesia. This case emphasizes the importance of adhering to strict aseptic technique and possibly of limiting the duration of catheter use. The authors emphasize the importance of using techniques that minimize the risk of bacterial contamination during both catheter placement and management of the infusion.

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**References**