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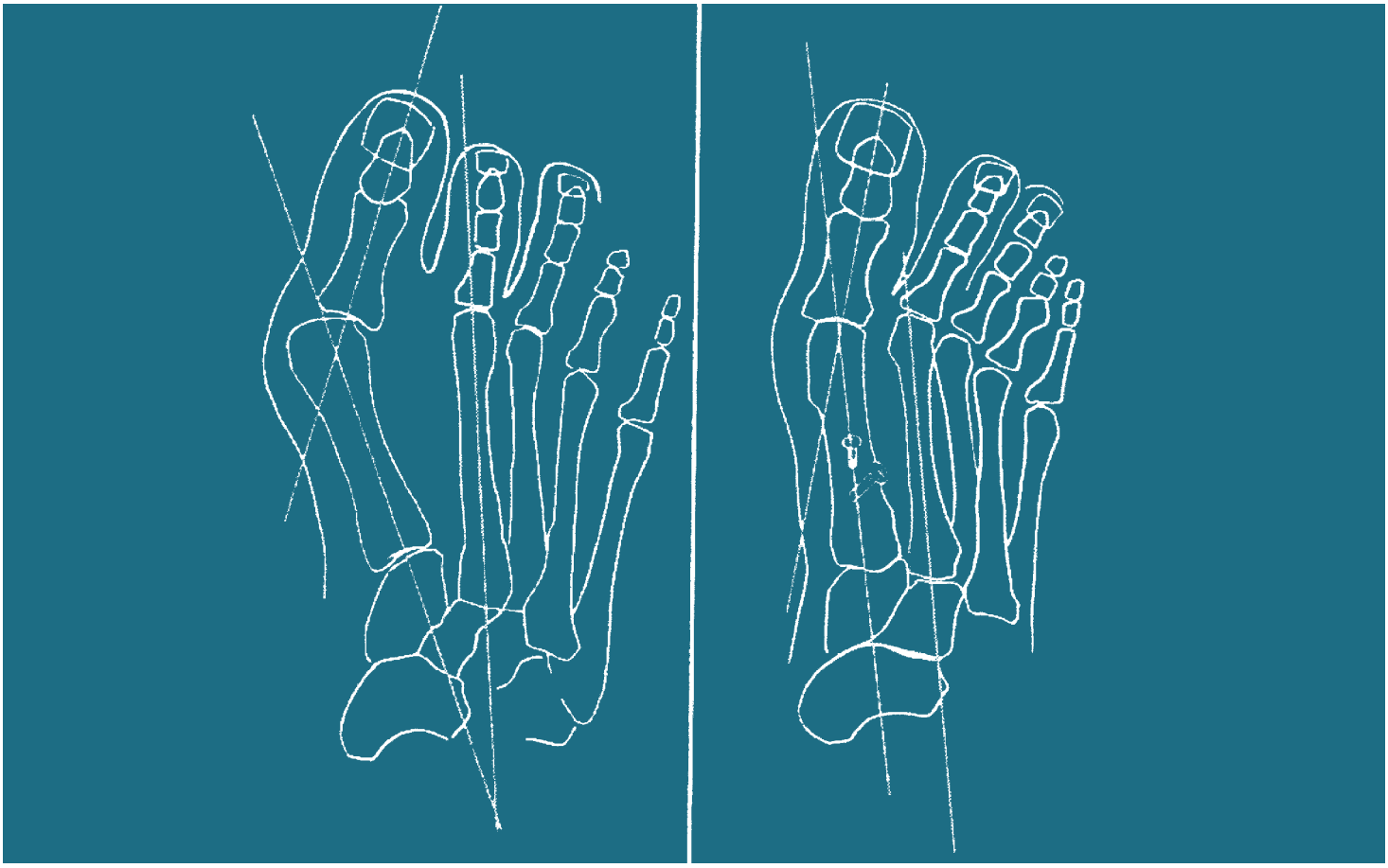

POSTOPERATIVE PAIN TREATMENT AT HOME WITH AN ELASTOMERIC PUMP

– a health technology assessment

Summary

2008

Danish Health Technology Assessment – funded projects 2008; 8(2)

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POSTOPERATIVE PAIN TREATMENT AT HOME WITH AN ELASTOMERIC PUMP

– a health technology assessment

Summary

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Summary

This health technology assessment (HTA) elucidates whether it is appropriate to introduce a new analgesic method after ambulatory foot surgery. The patients have moderate to severe postoperative pain lasting 3 - 4 days and conventional oral pain killers do not provide sufficient analgesia. Until this report, the standard postoperative pain treatment regime for these patients has been a blockade of the sciatic nerve in the popliteal fossa as a single shot injection (block method). The problem with this regime is that duration of analgesia is too short. Therefore we introduced a new method (block + pump), where the effect of the blockade is prolonged by continuous infusion of a local anaesthetic by a perineural catheter using an elastomeric pump.

This report is based on the literature study as well as the results of our own studies.

Technology

Primary efficacy

The efficacy and safety for both block and block + pump method respectively is high. The main difference is the duration of action. Single shot block with long-lasting local anaesthetic (Ropivacaine) has duration of about 20 hours, which is not sufficient. With a new block + pump method the patients have effective analgesia as long as the infusion lasts (55 hours). Consequently patients in block + pump group will use less opioids compared to the block group and thus will get better sleep and have less side effects.

Side effects

Most side effects (nausea and vomiting, tiredness, dizziness and constipation) occur in the block group due to shorter duration of analgesia and the need for rescue analgesics (opioids). The frequency of side effects is therefore higher in the block group.

Complications

Serious complications following peripheral nerve blocks are toxic reactions to local anaesthetics, local infection around the catheter and nerve injury. Nerve injuries are rare (0.2 – 1.7 %) and in the majority of cases they are temporary. No difference between the groups in the frequency of toxic reactions and occurrence of nerve injuries after use of local anaesthetics is expected. The risk of local infection is around 0.2 – 2.4 % and if an infection occurs, it is normally effectively treated by antibiotics.

Patient

Patient satisfaction was high with both methods and in our studies there was no significant difference in this aspect between the groups. This is surprising as the block + pump method gives better analgesia, better quality of sleep and fewer side effects. However, it is difficult for patients to compare when they can only experience one of the methods, without the possibility of choosing between them. In 2 of the 4 randomized, controlled trials concerning this topic patients were more satisfied with block + pump method. No differences were found as regards the time spent until the patients were able to start working and in the frequency of extra contacts with health services.

Economic evaluation

The cost-utility analysis demonstrates that the block and pump method has higher cost, but gives a slightly better quality of life in the first postoperative days, compared to the only Block method.

The direct cost of resource use was 8.066 DKK for patients receiving block treatment, while the direct cost was 8.617 DKK for patients in the block and pump group. When indirect costs are considered, resource use was 33.833 DKK for block patients compared to 34.204 DKK for block and pump patients.

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