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ORIGINAL STUDY

Sciatic nerve block causing heel ulcer after total knee replacement in 36 patients

Manoj TODKAR

From Nuffield Orthopaedic Centre, Oxford, UK

Femoral and sciatic nerve blocks are often used for postoperative analgesia following total knee replacement surgery. In this report, we focus on cases of heel ulcers which occurred following the implementation of peripheral nerve block in concert with knee replacement surgery. In some instances, heel ulcers have resulted in delayed rehabilitation and prolonged hospital stays in this group of patients, which makes this phenomenon a potential burden on the healthcare system. Pressure points in the foot should be protected after the implementation of nerve blocks to prevent pressure sores. An awareness of this unusual complication related to knee replacement surgery is necessary to prevent its occurrence and avoid delays in patient rehabilitation and recovery.

Key words : sciatic nerve block ; heel ulcer ; total knee replacement.

INTRODUCTION

Femoral and sciatic nerve blocks are commonly used for postoperative analgesia following total knee replacement. We present cases of heel ulcers following a peripheral nerve block for knee replacement surgery. Heel ulcers have resulted in delayed rehabilitation in these patients.

Pressure points in the foot should be protected after the nerve blocks to prevent occurrence of pressure sores. Awareness of this uncommon complication is necessary to prevent its occurrence and avoid delayed rehabilitation of patients *(2)*.

CLINICAL OBSERVATIONS

We report a series of patients who developed pressure ulcers over the heel following peripheral nerve block given for post operative analgesia after total knee replacement. This study was carried out over three years and included around 3000 patients. Thirty six patients developed ulcers over the heel in the postoperative period, which could be attributed to nerve blocks. All these patients had femoral and sciatic nerve blocks for post operative analgesia. The skin over the heel initially developed redness and blisters a few days after the surgery and later developed ulcers. The ulcer was dressed in aseptic manner and the heel was covered with a protective padding of hydroxypolymer dressing. The ulcers were inspected on a regular basis to rule out infection. The advice of a tissue viability nurse was sought as soon as possible. The ulcers took around 3-4 weeks to heal. During this period, the patients experienced pain while mobilising and rehabilitation was delayed. This delayed their discharge from the hospital.

■ Manoj Todkar, MS (Ortho), DNB (Ortho), MRCS, Orthopaedic Trainee

Nuffield Orthopaedic Centre, Oxford, UK.

Correspondence : Manoj Todkar, Flat 27, Peterson Hall, 25 Roseangle, Dundee DD1 4LS, United Kingdom.

E-mail : mtodkar@hotmail.com

DISCUSSION

Peripheral nerve blocks are commonly used for postoperative analgesia following total knee replacement. They reduce the requirement of morphine in the postoperative period *(1, 4)*. The effect of nerve block lasts for around 48-72 hours after surgery. During this period, the patient experiences anaesthesia in the operated leg and cannot actively move his foot or ankle. Patients lie in bed until mobilisation begins. Mobilisation is delayed until the effect of nerve block wears off, i.e. until the patient regains sensations in his leg and starts to move ankle and foot. After total hip replacement surgery, the operated leg is protected in a trough to avoid dislocation of the hip. The trough keeps the heel elevated and thus avoids development of pressure sores. After knee replacement surgery, the trough is not used in order to avoid flexion deformity in the knee ; the leg is wrapped in a compression bandage and kept flat in bed. This puts pressure points in the foot at risk of developing sores. The detection of sores is delayed as the affected part of the foot is under effect of the nerve block. Patients complain of soreness in the heel 2-3 days after surgery as the effect of nerve block wears off. Sores are painful and delay the mobilisation and rehabilitation. This increases the duration of hospital stay as well. Peripheral nerve blocks are very effective for postoperative analgesia and also reduce requirement of morphine in the postoperative period. Proper measures should be undertaken to avoid development of heel ulcers e.g. regular inspection of pressure areas in the leg and foot, two hourly position change, protection of the pressure areas with appropriate polymer dressings, monitoring the changes in skin and seeking early help from tissue viability nurses and plastic surgeons. A comprehensive 12-step detailed protocol for treatment of pressure ulcers is described ; this includes recognising that every patient with limited mobility is at risk for developing a sacral, ischial, trochanteric, or heel ulcer ; daily assessment of the skin ; objective measurement of every wound ; immediate initiation of a treatment protocol ; mechanical debridement of all nonviable tissue ; establishment of a moist wound-healing environment ; nutritional supplementation for malnourished patients ; pressure relief for the wound ; elimination of drainage and cellulitis ; biological therapy for patients whose wounds fail to respond to more traditional therapies ; physical therapy ; and palliative care. Availability of the described treatment modalities, in combination with early recognition and regular monitoring, ensures rapid healing and minimises morbidity, mortality, and costs *(3)*. If not, the development of heel ulcer hampers the very purpose of nerve block, i.e. painless early mobilisation after surgery.

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