CASE REPORT

Peroneal neuropathies secondary to postoperative lower limb immobilisation

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ABSTRACT

Background: Mechanical forces are important factors that cause nerve injuries during and after orthopaedic procedures. Common peroneal neuropathies due to pressure injury can occasionally be seen in patients with femoral shaft fractures who underwent supine intramedullary nailing of their fractures.

Methods: Case description.

Results: Three patients who sustained left femoral shaft fractures underwent intramedullary nailing. Postoperatively, the operated limbs were elevated at 90° knee flexion by supporting the calves on a metal frame with canvas slings. All three patients developed incomplete common peroneal nerve palsy 48 hours after the operation. Nerve conduction studies with needle electromyography confirmed nerve injury with segmental conduction block and axonal degeneration at the level of the fibula head in all. Regional pressure analysis using a pressure sensor showed a high concentration of pressure at the edge of the canvas sling.

Conclusion: Postoperative limb elevation using a canvas sling can be unsafe if proper precautions are not taken.

Key Words: Postoperative limb elevation, Common peroneal nerve palsy, Pressure neuropathy

中文摘要

手術後下肢以帆布吊帶承托小腿所引致的腓總神經癱瘓

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背景：在骨科診療程序進行當中或之後所引起的神經損傷，機械力往往是一個重要因素。股骨幹骨折病人在進行仰臥位內釘固定術時，偶然會發生由壓力傷所導致的腓總神經病變。

方法：個案研究。

結果：三位患有左側股骨幹骨折接受髓內釘治療的病人，術後患肢膝關節90°屈曲作為抬高，並以帆布吊帶架支撐小腿，術後48小時內病人全部發生不完全腓總神經癱瘓。神經傳導及肌電圖檢查確定神經節段性傳導阻滯及軸索變性，損傷位置全都在腓骨頭部位；經壓力感應器分析，壓力高度集中於帆布吊帶的邊緣。

結論：手術後患肢以帆布吊帶承托小腿，可以視作不安全。

INTRODUCTION

Peripheral neuropathies due to pressure injuries are common.9 Pressure neuropathy of the peroneal nerve at the fibular head occurs occasionally. Injury to the common peroneal nerve is a well-documented complication of intraoperative patient positioning.12,16 Peroneal nerve compression at the fibular neck or position-induced nerve stretching is the presumed mechanism of nerve injury. We report three patients with unilateral common peroneal nerve motor and sensory neuropathies following prolonged postoperative leg elevation with multiple canvas slings attached to a Bohler-Braun...