



Fasciotomy wounds associated with acute compartment syndrome - a systematic review of effective management

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Abstract

Objectives: To systematically review the effectiveness of different treatment options for managing a fasciotomy wound on outcomes, including time to primary wound healing, percentage of patients who need skin grafts to effect closure of the wound and length of stay in hospital following the fasciotomies, in patients with acute compartment syndrome of the limb(s).

Methods: Published and unpublished English language papers about human subjects from January 1960 to June 2012 were identified using electronic searches of medical and nursing databases. Reference lists of relevant articles were also searched. A systematic review of the papers found was conducted.

Results: Thirty-two papers met the inclusion criteria and passed critical appraisal.

One randomised controlled trial (RCT) was analysed separately and four cohort studies were meta-analysed. The RCT favoured the use of shoelace technique over negative pressure wound therapy based on a range of indicators. The cohort studies favoured the use of negative pressure wound therapy over saline soaked gauze on a range of indicators.

Conclusion: The systematic review found limited evidence on which to base practice decisions. The single RCT needs to be replicated to confirm findings before practice change can be confidently recommended. The evidence provided some support for the use of vessel loop shoelace technique to improve the chances of achieving a primary wound closure without the need for a split thickness skin graft and to reduce length of stay when compared with negative pressure wound management. The use of negative pressure wound management appears to be associated with a higher rate of split thickness skin graft than vessel loop shoelace. Saline soaked gauze is not recommended for use with these wounds.

Keywords: Compartment syndrome, fasciotomy, systematic review, quantitative systematic review, wound management, wound care, wounds, wound dressings, VAC, vacuum assisted closure, split thickness skin graft

Student declaration

This work contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution to Margaret Walker and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text.

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