

Delayed presentations of crush injury and the controversies surrounding the missed compartment or wipe out syndrome

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The crush and reperfusion injury phenomenon are well described. The experiences in Israel and the associated literature warned of the consequences of performing fasciotomies in 'missed compartment syndrome' also known as 'wipe out' syndrome.

The high incidence of infection and increased morbidity/mortality suggested a conservative, non-surgical approach to be the preferred treatment in these cases.

However, we present two cases of crush injury which presented late and were initially thought to have wipe out syndrome, yet displayed very unusual disease progression and thus had significant delay to fasciotomy. These patients experienced 'staged' compartment syndrome during their inpatient stay and had phased fasciotomies over a 48-h period. Both of these patients had viable muscle at operation, suggesting that crush injury patients have a unique disease process. Whilst the term 'compartment syndrome' may actually be a misnomer in this type of injury, the consequence of the underlying pathology is ultimately identical, even if their presentation and pathophysiology are different.

We review the literature surrounding this subject and warn against the presumption that prolonged crush injury represents a missed opportunity.

Keywords: Crush; Compartment; Delayed; Wipe-out

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2B.9**Exposure and experience: A survey of UK Orthopaedic Trainees exposure to limb threatening trauma**W.G.P. Eardley^a, D.M. Taylor^{b,*}, P.J. Parker^c^a Northern Deanery, UK^b Yorkshire Deanery, UK^c Friarage Hospital, UK

Aim: To establish the levels of confidence, exposure to caseload and perceived adequacy of training of UK (UK) Orthopaedic Specialist Trainees in the assessment of limb viability and amputation surgery following high energy trauma.

Methods: A web-based survey was sent to a sample of orthopaedic trainees. Scenarios included the assessment of limb viability and amputation following significant trauma.

Statistical analysis required 214 responses from 713 trainees to achieve a <0.05 error rate with 90% confidence. 225 responses were received and analysed by means of descriptive statistics.

Results: Limb viability:

27.8% of trainees were fully confident. A positive correlation exists between training year and fully confident reports. 68.6% encounter such injury either every 6 months or less frequently. 18.6% regard their training in these cases inadequate. No correlation is seen between experience and perceived adequacy of training.

Amputation:

10.3% of trainees were fully confident. A positive correlation exists between time in training and perceived fully confident reports.

57.3% encounter such injury either every 6 months or less frequently. 36.3% regard their training in these cases inadequate. No correlation is seen between experience and exposure to cases or perceived adequacy of training.

dealing with such cases is seen to increase with training. Perceived adequacy of training and exposure to cases did not change over time. In the light of established concerns in deficiencies in training it can be seen that focussed attention should be given to complex extremity injury as part of an educational strategy for ensuring that future generations of orthopaedic surgeons are able to manage complex injuries.

Keywords: Training; Limb viability; Amputation; Survey

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2B.10**Pattern of tendon and nerve injuries: How accurate is pre-operative diagnoses?**

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Hand injuries rank as the second most common category in A&E medicolegal claims. Accurate diagnosis and treatment is essential, with a high index of suspicion and low threshold for exploration. The first clinical examination for tendon and nerve injuries is crucial for prioritisation in a busy unit and surgical/anaesthetic planning.

St Andrew's centre is a tertiary level referral unit for hand injuries and has a significant throughput of trauma (head to feet) with 10–15 cases daily. Most patients are reviewed in the daily consultant/senior trainee-lead trauma clinic, with entries recorded on a computerised trauma database.

We analysed the pattern of tendon and nerve injuries and accuracy of pre-operative assessment compared to operative findings.

The database for a 12-month period was reviewed. After exclusions, 1670 sequential cases of adults with below-elbow, soft tissue injuries and complete clinical/operative notes were included. There were 1573 structures potentially injured in 823 digits, including 994 named tendons and 568 nerves. Knife and glass injuries predominated and 89% were operated on within 24 h of assessment.

Anatomical accuracy was greater than 98% for both tendons and nerves. Border nerves (index radial and little finger ulnar) were particularly at risk. Assessment of severity (nil, partial or total) was accurate in 68% overall.

This findings support our practice of low threshold for exploration. Distribution and accuracy by structure and zone are discussed, with recommendations for diagnostically difficult regions.

Knowledge of potential pitfalls may prevent inappropriate choices of anaesthetic and aids prioritisation.

Keywords: Hand; Lacerations; Tendon injuries; Nerve injuries

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K1

Keynote Lecture

New technologies for the enhancement of skeletal repair

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Introduction: The ability to stimulate fracture repair, enhance spinal fusions, heal nonunions or restore lost segments of bone is a common goal among orthopaedists, traumatologists, and scientists who investigate wound healing responses. Whilst in most clinical set-