

Editorial

Upper and Lower Limb Reconstruction Following Trauma

Daniel J. Jordan¹ and Sandip Hindocha^{*,2,§}

¹Plastic Surgery Unit, The Christie NHS Foundation Trust, Manchester, UK

²Plastic Surgery Unit, Whiston Hospital, Liverpool, UK

- 1) The ortho-plastic approach to soft tissue management in trauma
- 2) Flap decisions and options in soft tissue coverage of the upper limb
- 3) The Development and Future of Reconstructive and Microvascular Surgery of the Hand
- 4) Flap decisions and options in soft tissue coverage of the lower limb
- 5) Pilon Fracture: A case report of a 45 year old dental technician
- 6) Orthopaedic approaches to proximal humeral fractures following trauma

This series provides a concise overview of the management of trauma. Trauma is an evolving speciality involving a wide range of emergency, medical and surgical teams. Although this series should not be used as a definitive guide, it highlights many key aspects in the treatment of a trauma patient, especially those involving the extremities and the reconstructive surgeon.

Trauma management has long been debated and although presentations of trauma do vary the initial approach and later decision making have become more standardised with time. This series covers the choices that need to be made when a trauma case presents, including the initial management of open fractures, as well as the range of options available for flap reconstruction of both the upper and lower limb. The history, and future, of traumatic hand surgery and the development of the microsurgical field are dissected and we also look at the much documented treatment of the complex fractures involving the proximal humerus and those described as a pilon fracture.

In our first paper, Jordan *et al.* review the management of the commonly presenting open fracture. Current guidance laid out by the British Orthopaedic Association and British Association of Plastic Reconstructive and Aesthetic Surgeons, which is widely accepted as the gold level of

therapy is reviewed alongside other management options in these scenarios.

Griffin *et al.* describe the options available in soft tissue deficiency of the upper limb, seen in events involving trauma, burns, infection and tumour excision. The ultimate soft tissue coverage is dependent on the size and site of the wound, the complexity of the injury and the status of the surrounding tissue and patient health. Local, regional and free flap choices are discussed, highlighting the benefits and challenges associated with the different approaches.

Malahias *et al.* proceed to discuss the specifics involved with the management of the distal upper limb when they review the current literature as well as the history of hand reconstruction. The hand is often thought of as a key discriminator in what makes a human 'human'. The hand is both intricate and fascinating in its design and function, and allows a person to interact with both their surroundings, and other people. Due to its use, damage to the hand is common and injuries can have a profound, physical, psychological, financial and socially crippling effect. From the first successful arm replantation in 1962, and the myriad of autologous free flaps of varying composition discovered since, the amount of trauma to the patient and their family after an injury has become less devastating.

The decisions in flap reconstruction are again echoed when Jordan *et al.* discuss the management of lower limb tissue defects. Essentially, reconstruction of the leg is less complex than that required in restoring functionality of the upper limb. In terms of reconstruction, the primary goals are based on the preservation of life and limb, and then the restoration of form and function. The reconstructive ladder is reviewed, and the key points of management highlighted which incorporate a multidisciplinary approach to optimise both surgeon and patients outcomes.

Proximal humeral fractures have been a topic of discussion since the 3rd century BC, and Mafi *et al.* take a systematic review of the literature on this topic. Being the most common humerus fracture, both conservative and surgical approaches are discussed, in particular whether one choice is better in what is an increasingly presenting injury in our ageing population.

The pilon fracture is both complex and difficult to treat. Mafi *et al.* aim to summarise current understanding and describe why initial external fixation is crucial, as well as evaluating its merits and drawbacks in managing this high

*Address correspondence to this author at the Department of Plastic Surgery, Whiston Hospital, Liverpool, UK L35 5DR, UK;
Tel: + 44(0)1244366265; Fax: +44(0)1244366265;
E-mail: hindocha2001@yahoo.com

§Guest Editor.

impact injury. In this paper, a case report highlights the pilon fracture injury, and discuss ways to reduce the complications associated with external fixation of open intra-articular distal tibial fractures.

We hope that all emergency and trauma physicians and surgeons find this issue useful, as well as general practitioners and therapists who may not be exposed to the initial injuries but are involved in the later rehabilitation.

© Jordan and Hindocha; Licensee *Bentham Open*.

This is an open access article licensed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0/>) which permits unrestricted, non-commercial use, distribution and reproduction in any medium, provided the work is properly cited.