

# Soft Tissue Reconstruction of Complete Circumferential Defects of the Upper Extremity

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Original Article

**Background** Upper extremity soft tissue defects with complete circumferential involvement are not common. Coupled with the unique anatomy of the upper extremity, the underlying etiology of such circumferential soft tissue defects represent additional reconstructive challenges that require treatment to be tailored to both the patient and the wound. The aim of this study is to review the various options for soft tissue reconstruction of complete circumferential defects in the upper extremity.

**Methods** A literature review of PubMed and MEDLINE up to December 2016 was performed. The current study focuses on forearm and arm defects from the level at or proximal to the wrist and were assessed based on Tajima's classification (J Trauma 1974). Data reviewed for analysis included patient demographics, causality, defect size, reconstructive technique(s) employed, and postoperative follow-up and functional outcomes (when available).

**Results** In accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines, 14 unique articles were identified for a total of 50 patients (mean = 28.1 years). Underlying etiologies varied from extensive thermal or electrical burns to high impact trauma leading to degloving or avulsion, crush injuries, or even occur iatrogenically after tumor extirpation or extensive debridement. Treatment options ranged from the application of negative pressure wound dressings to the opposite end of the spectrum in hand transplantation.

**Conclusions** With the evolution of reconstructive techniques over time, the extent of functional and aesthetic rehabilitation of these complex upper extremity injuries has also improved. The proposed management algorithm comprehensively addresses the inherent challenges associated with these complex cases.

**Keywords** Upper extremity / Reconstructive surgical procedures / Soft tissue injuries

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No potential conflict of interest relevant  
to this article was reported.

Received: 3 Sep 2016 • Revised: 1 Jan 2017 • Accepted: 6 Feb 2017

pISSN: 2234-6183 • eISSN: 2234-6171 • <https://doi.org/10.5999/aps.2017.44.2.117> • Arch Plast Surg 2017;44:117-123

## INTRODUCTION

The upper extremity is functionally and anatomically complex. Its role in our daily interactions with the external environment

translates to an increased susceptibility to various forms of trauma including burns (thermal, electrical), degloving or avulsion and crush injuries of the skin envelope. Occasionally, the resultant soft tissue defect may involve complete circumferential de-

# Soft Tissue Reconstruction In The Upper Extremity

**D Kirk**

A decorative graphic element consisting of a light blue horizontal bar with a rounded right end, and a red circular shape partially visible behind it.

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**Flaps and Reconstructive Surgery E-Book** Fu-Chan Wei, Samir Mardini, 2016-08-26 With coverage of nearly twice the number of flaps as the previous edition *Flaps and Reconstructive Surgery* 2nd Edition provides trainees and practicing surgeons alike with the detailed expert knowledge required to ensure optimal outcomes It includes chapters and expert commentaries from more than 100 authors and world renowned leaders in the field while brand new cases and high quality illustrations focused on flap harvest markings and reconstruction keep you abreast of today's latest developments Includes high quality illustrations of regional anatomy flap anatomy and step by step flap dissections as well as clear photographs demonstrating successful reconstructions Detailed case studies illustrate how to optimize every aspect of care for the reconstructive surgery patient including the postoperative period and long term follow up Expert Consult eBook version included with purchase This enhanced eBook experience allows you to search all of the text figures images videos

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**Green's Operative Hand Surgery E-Book** Scott W. Wolfe,William C. Pederson,Scott H. Kozin,Mark S. Cohen,2021-12-03 Widely recognized as the gold standard reference in the field Green s Operative Hand Surgery 8th Edition provides complete coverage of the surgical and nonsurgical management of the full range of upper extremity conditions In a clearly written and well illustrated format it contains both foundational content for residents and fellows as well as new approaches case based controversies and outcomes based solutions for practitioners Drs Scott W Wolfe William C Pederson Scott H Kozin and Mark S Cohen along with new international contributing authors provide expert perspectives and preferred methods for all aspects of today s hand wrist and elbow

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[Advances in Upper and Lower Extremity Microvascular Reconstructions](#) Fr  d  ric Schuind,2002 Advances made in microsurgical techniques during the last three decades have dramatically improved the treatment of complex limb injuries such as a closed fracture covered by healthy tissue and a complex open fracture of the tibia Microvascular transfers from the foot have revolutionized the treatment of digital amputations and vascularized bone transfers are used in various indications The microvascular techniques are still evolving Many imaginative new flaps are being proposed to meet precisely the functional requirements of the various defects Alternative anastomotic techniques are being investigated and the no flow phenomenon has been extensively studied Allotransplantation may be feasible in the future This unique book is a result of the exchange of ideas among clinicians of various specialties noted for their innovations and basic researchers involved with the problems of microvascular reconstruction of upper and lower extremities While most of the chapters are invited contributions some are based on presentations made during an international symposium held in Brussels Belgium in 1997

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*Grabb's Encyclopedia of Flaps: Upper Extremities, Torso, Pelvis, and Lower Extremities* Berish Strauch, Luis O. Vasconez, Charles K. Herman, Bernard T. Lee, 2015-11-11 Still the most comprehensive reference available on surgical flaps this classic text remains your go to source for practical authoritative guidance on achieving the best possible outcomes for your patients The thoroughly revised 4th Edition features an all new full color format that greatly enhances its visual appeal and usefulness in your everyday practice Dozens of internationally recognized experts describe every clinical proven flap

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biopsy techniques staging and prognosis surgery of sarcomas in extremity soft tissue abdominal wall and trunk and skeletal bone hyperthermia in sarcoma treatment isolated limb perfusion surgery for metastases reconstructive surgery radiation therapy systemic chemotherapy multidisciplinary care treatment induced sarcoma pain management in sarcoma and basic research including molecular biology and mouse models

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