

CLINICS IN PLASTIC SURGERY

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DIFFICULT PROBLEMS IN HAND SURGERY

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A current review of flexor tendon repair, with emphasis on difficult cases, is presented. The authors base their discussion on studies of the microanatomy and microvasculature of the human flexor tendon system as well as on experimental studies in flexor tendon nutrition and healing. A two-stage operation is described in which the tendon sheath is first restored by transplantation of autologous synovial tissue, then tendon grafting is performed.

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The authors analyze data from four surveys, three conducted by the National Center for Health Statistics and one conducted by the U.S. Consumer Product Safety Commission. The surveys indicate that fractures and open wounds are the most common injuries of the upper extremity and often require hospitalization. On the whole, injuries to the upper extremity are significant not only for their frequency but also for their impact on the quality of life of the injured patient.

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The human fingernail performs a variety of important functions, contributing to skilled hand function and delicate touch; thus, treatment of fingernail injuries is much more than a cosmetic undertaking. The principles that should be followed when treating traumatic nail deformities and performing reconstructive surgical procedures are discussed; they are equally applicable to toenail injuries.

CURRENT CONCEPTS OF NERVE REPAIR 33

Michael E. Jabaley

Peripheral nerve repair may be the last frontier in the treatment of injuries to the hand and forearm. The author discusses the current "state of the art" and outlines principles and techniques of surgical management of transected nerves, including indications for epineurial suture and group funicular suture.

RECURRENCE AND OTHER COMPLICATIONS IN SURGERY OF DUPUYTREN'S CONTRACTURE 45

R. Tubiana, M. Fahrer, and C. J. McCullough

The goals of surgical treatment of patients with Dupuytren's contracture include both preventing recurrence of disease and restoring good function to the hand. A carefully selected operative procedure and meticulous attention to detail both during surgery and in postoperative management will help to achieve these goals and guarantee a minimal number of surgical complications.

THE PLACE OF INTERNAL SKELETAL FIXATION IN SURGERY OF THE HAND .. 51

Viktor E. Meyer, David T. W. Chiu, and Robert W. Beasley

Basic concepts in managing fractures of the hand are presented. Techniques of stabilization and rigid internal fixation both offer important advantages to the patient when selection of the procedure follows careful evaluation of the problem and consideration of the alternatives. Indications for and possible pitfalls of each technique are evaluated.

SKELETAL INJURIES OF THE HAND IN CHILDREN 65

Frank Stein

Although most skeletal injuries in children can be successfully treated, exceptions to this rule can lead to deformity, loss of function, and growth disturbances. Epiphyseal injuries, crush injuries, mallet finger deformities, and fractures are discussed, and, when applicable, specific differences between the treatment of these injuries in the child and in the adult are highlighted.

SCAPHOID FRACTURES: BASIC CONCEPTS OF MANAGEMENT 83

Charles P. Melone, Jr.

Fracture of the scaphoid is a common and serious carpal injury associated with immediate and potential problems such as fracture non-union, malunion, painful wrist instability, and osteoarthritis. Rational treatment should incorporate understanding of blood supply and fracture healing, ap-

appropriate radiographs for evaluation of all fractures, selection of treatment based on stability and healing potential, and prompt correction of even minimal fracture displacement.

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Gary L. Woods and Richard I. Burton

Injuries to the proximal interphalangeal joint are common and frequently cause pain and swelling. In order to facilitate appropriate and timely treatment of these injuries, a precise diagnosis must be made that distinguishes between injuries to the flexor or extensor tendon mechanism, intra-articular fractures, and ligamentous and volar plate injuries.

SMALL JOINT RECONSTRUCTION BY PERICHONDRIAL ARTHROPLASTY 107
Sune H. Johansson and Ove Engkvist

The operative technique of perichondrial arthroplasty, in which destroyed articular cartilage is replaced by perichondrial grafts and normal joint anatomy is restored, is described. Because of the complexity of the procedure, indications should be strict; when selection of patients is done with care, good results are obtained. The principles of perichondrial arthroplasty that are used in metacarpophalangeal and interphalangeal joints have been applied to other joints with satisfactory results.

THE THEORY OF THE TRANSPOSITION FLAP AND ITS PRACTICAL
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Graham Lister

Planning the design of local transposition flaps involves careful attention to skin availability, pivot point, selection of the flap, lengthening of the critical line to make the flap wider or longer, and avoidance of undue tension. A procedure for raising and transposing the flap once the design is complete is outlined; six options are open to surgeons when no reasonable amount of traction will carry the flap over the defect.

AN OVERVIEW OF FLAPS FOR HAND AND FOREARM RECONSTRUCTION 129
David A. Gilbert

Selection of flaps for hand and forearm reconstruction should follow careful evaluation of random pattern, axial pattern, myocutaneous, and free flaps, and should include aesthetic as well as functional considerations. The benefits of, potential of, and contraindications to each type of flap are examined.

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Robert W. Beasley

Secondary repair of burned hands requires a comprehensive plan that takes into consideration the patient's individual problems. With severe injury, multiple surgical procedures are often necessary and should be planned for maximal economy of time and stages. Occasionally, the extent of damage to the hand is so severe that, for functional or aesthetic reasons, amputation and prosthetic fitting are recommended.

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