

Volume nine

# Symposium on reconstructive hand surgery

*Editors*

**J. WILLIAM LITTLER, M.D.**

*Chief of Plastic and Reconstructive Hand Surgery,  
Roosevelt Hospital, New York, New York*

**LESTER M. CRAMER, M.D.**

*Professor and Chairman, Section of Plastic Surgery,  
Temple University, Philadelphia, Pennsylvania*

**JAMES W. SMITH, M.D.**

*Associate Professor of Plastic Surgery,  
The New York Hospital-Cornell Medical Center,  
New York, New York*

Proceedings of the Symposium of the Educational Foundation  
of the American Society of Plastic and Reconstructive Surgeons, Inc.,  
in collaboration with The Committee on Continuing Education,  
the American Society for Surgery of the Hand, held at Rockefeller University,  
The New York Hospital-Cornell Medical Center,  
New York, New York, November 2-4, 1972

With 458 illustrations, including 2 full-color plates

**The C. V. Mosby Company**

Saint Louis 1974

# Contents

## Part I

### Basic architecture and functional anatomy

- 1 Hand structure and function, 3  
J. William Littler
- 2 Joints and their ligaments, 13  
Richard G. Eaton
- 3 Electrical testing: neuromuscular physiology and clinical application, 20  
Gerald J. Herbison and William E. Staas, Jr.

## Part II

### Vascular anatomy and physiology

- 4 Vascular anatomy and shunting systems through the humerus, 55  
Patrick G. Laing
  - 5 Tourniquet ischemia, muscle anoxia, and operative edema, 59  
E. F. Shaw Wilgis
- Discussion for Part II, 69

## Part III

### Surgical considerations

- 6 A basic approach to the injured hand, 77  
Paul M. Weeks
- 7 Selecting the operation and the patient, 83  
Harold E. Kleinert and Graham Lister
- 8 Hand, wrist, and forearm incisions, 87  
J. William Littler

## Part IV

### Surface coverage

- 9 Indications for skin grafting the hand, 101  
John A. Boswick, Jr.
- 10 Distant pedicle flaps, 104  
John C. Kelleher and Robert K. Dean

## Part V

### Selective hand problems

- 11 Severed tendons and nerves distal to metacarpophalangeal joint, 117  
Richard I. Burton
- 12 Splinting the hand, 129  
Jerome E. Adamson, Charles E. Horton,  
Richard A. Mladick, and James H. Carraway

## Part VI

### Frequent hand problems in plastic and reconstructive surgery

- 13 Practical genetics of congenital hand abnormalities, 141  
Robert M. Woolf, T. Ray Broadbent, and  
Charles M. Woolf
- 14 Practical factors in the treatment of syndactyly, 144  
Adrian E. Flatt
- 15 Macroductyly (digital gigantism): its nature and treatment, 157  
Milton T. Edgerton and Daniel B. Tuerk

- 16 Macroductyly: a case study, 173  
**Professor Hanno Millesi**
- 17 Camptodactyly, 175  
**Professor Hanno Millesi**
- 18 Wringer (crush) injuries of the upper extremity, 178  
**Milton T. Edgerton and Gerald T. Golden**
- 19 Unusual problems of the hand in children, 188  
**Ray A. Elliott, Jr.**
- 20 Restoration of the amputated thumb, 202  
**J. William Littler**
- 21 The missing thumb, 214  
**James F. Murray**  
Discussion for Part VI, 223

#### **Part VII**

##### **What's new**

- 22 Prosthetic joints, 229  
**Adrian E. Flatt**
- 23 Use of foreign implants in the hand other than for joint replacement, 233  
**John C. Kelleher**
- 24 Use of catheters in treatment of infections of the hand, 236  
**Sylvester J. Carter and Walter L. Mersheimer**
- 25 Hand complications of drug addiction, 242  
**Richard G. Eaton**
- 26 Finger motion related to rehabilitation, 246  
**Gerald J. Herbison**
- 27 New instruments in hand surgery, 261  
**Harold E. Kleinert**
- 28 Soft tissue wounds of the hand, 265  
**F. William Bora, Jr., and Gary Busenkell**

- 29 What's new in nerve repair, 271  
**Professor Hanno Millesi**
- 30 What's new with bones, 274  
**Richard G. Eaton and John de L. S. Morris**
- 31 Suture materials and tissue replacements, 279  
**Jerome E. Adamson**  
Discussion for Part VII, 280

#### **Part VIII**

##### **Some biologic and philosophic thoughts of a surgeon**

- 32 Some biologic and philosophic thoughts of a surgeon, 285  
**Joseph E. Murray**

#### **Part IX**

##### **Techniques in microsurgery**

- 33 Fascicular technique for nerve repair, 293  
**Professor Hanno Millesi**
- 34 Digital transplantation, 295  
**Harry J. Buncke, Jr.**
- 35 Some thoughts on microsurgery as applied to small vessel and nerve surgery, 298  
**Harold E. Kleinert**
- 36 Replacement of amputated digits and extremities, 300  
**Paul G. Lendvay**  
Discussion for Part IX, 305

#### **Color plates**

- 1 Repaired digital artery, 302  
2 Eccentric biangulation, 303