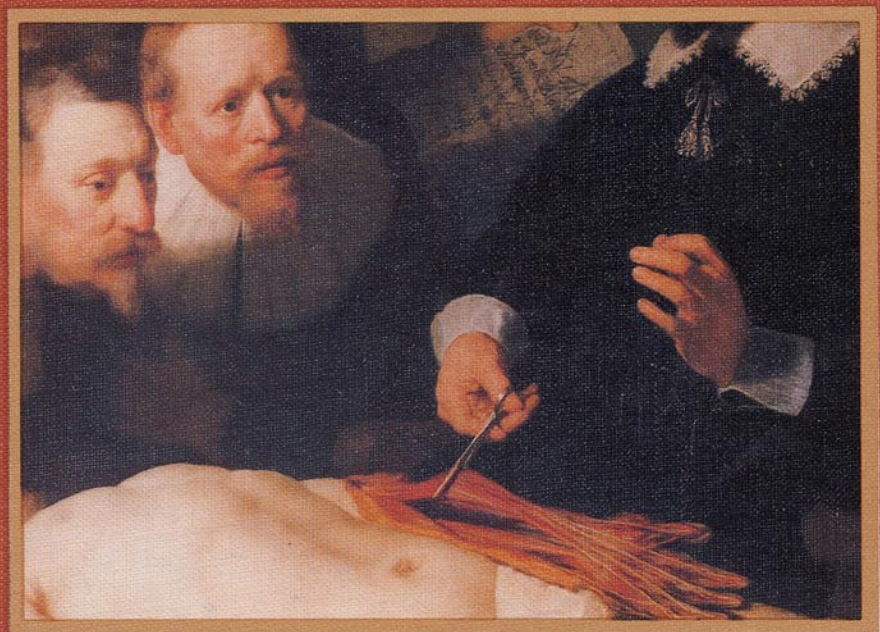


The
HAND



TUBIANA

CONTENTS

PART ONE—SURGERY OF TENDONS

INTRODUCTION.....	1
<i>Raoul Tubiana</i>	

Section 1 Surgical Techniques

Chapter 1

HISTORICAL SURVEY OF THE TREATMENT OF TENDON LESIONS IN THE HAND	3
<i>Raoul Tubiana</i>	

Chapter 2

GENERAL ORGANIZATION OF THE TENDON (INTRATENDINOUS STRUCTURE)	6
<i>François Bonnel and Pierre Baldet</i>	

Chapter 3

TENDON LESIONS: ANATOMICAL, PATHOLOGICAL, AND BIOLOGICAL CONSIDERATIONS.....	11
<i>Raoul Tubiana</i>	

Chapter 4

THE NUTRITION OF FLEXOR TENDONS	20
<i>Göran Lundborg</i>	

Chapter 5

OPTIMIZING TENDON REPAIRS WITHIN THE DIGITAL SHEATH	33
<i>Edward R. Weber</i>	

Chapter 6

THE EFFECTS OF AGING AND VARIATIONS IN VINCULA ON FLEXOR TENDON VASCULARIZATION.....	39
<i>Takeshi Matsui and James M. Hunter</i>	

Chapter 7

THE DISTRIBUTION OF BLOOD VESSELS IN THE EXTENSOR APPARATUS OF THE HUMAN DIGIT.....	45
<i>Michinobu Maeda and Takeshi Matsui</i>	

Chapter 8

GENERAL PRINCIPLES OF TREATMENT OF TENDON LESIONS	50
<i>Raoul Tubiana</i>	

Chapter 9

TENOLYSIS	67
-----------------	----

Claude E. Verdan

Section 2 Lesions of the Extensor Tendons

INTRODUCTION.....	73
-------------------	----

Raoul Tubiana

Chapter 10

SKIN COVER FOR THE EXTENSOR APPARATUS AND INDICATIONS FOR ITS USE.....	75
---	----

Michel Merle

Chapter 11

LESIONS OF THE DIGITAL EXTENSOR.....	82
--------------------------------------	----

Raoul Tubiana

Chapter 12

THE MALLET FINGER.....	85
------------------------	----

Raoul Tubiana

Chapter 13

THE BROOKS-GRANER PROCEDURE FOR CORRECTION OF MALLET FINGER.....	97
---	----

Walter Manna Albertoni

Chapter 14

ANATOMY OF THE EXTENSOR APPARATUS AT THE LEVEL OF THE PROXIMAL INTERPHALANGEAL JOINT.....	101
--	-----

Raoul Tubiana

Chapter 15

THE BOUTONNIÈRE DEFORMITY	106
---------------------------------	-----

Raoul Tubiana

Chapter 16

THE SWAN-NECK DEFORMITY	125
-------------------------------	-----

Raoul Tubiana

Chapter 17

LESIONS OF THE EXTENSOR APPARATUS AT THE LEVEL OF THE SHAFT OF THE PROXIMAL AND MIDDLE PHALANGES.....	137
--	-----

Raoul Tubiana

Chapter 18

LESIONS OF THE EXTENSOR TENDONS AT THE LEVEL OF THE METACARPOPHALANGEAL JOINT	138
--	-----

Raoul Tubiana

Chapter 19

LESIONS OF THE EXTENSOR TENDONS IN THE METACARPOPHALANGEAL ZONE	141
---	-----

Jacques Michon

Chapter 20

EXTENSOR TENDON INJURIES ON THE DORSUM OF THE HAND AND WRIST	143
--	-----

Raoul Tubiana

Chapter 21

THE ULNAR FLAP	149
----------------------	-----

Corinne Becker and Alain Gilbert

Chapter 22

LESIONS OF THE EXTENSORS OF THE THUMB	152
---	-----

Raoul Tubiana

Chapter 23

PROTECTED PASSIVE MOBILIZATION AFTER SUTURING OF THE EXTENSOR TENDONS OF THE HAND: A SURVEY OF 120 CASES	157
--	-----

Yves Allieu, Gérard Asencio, and Jean-Claude Rouzaud

Section 3 Injuries of the Flexor Tendons

Chapter 24

TRAUMATIC LESIONS OF THE FLEXOR TENDONS OF THE FINGERS AND THE THUMB	167
--	-----

Raoul Tubiana

Chapter 25

BIOLOGICAL DETERMINANTS IN THE RESULTS OF DIGITAL FLEXOR TENDON REPAIR	180
--	-----

Phillip Matthews

Chapter 26

ENLARGEMENT PLASTY OF THE PROXIMAL PULLEYS	191
--	-----

Adalbert I. Kapandji

Chapter 27

PRIMARY REPAIR OF FLEXOR TENDONS IN THE DIGITAL CANAL	194
---	-----

Claude E. Verdan

Chapter 28

PRIMARY REPAIR OF FLEXOR TENDONS	199
--	-----

Harold E. Kleinert, Timothy Gill, and Bruce Schlafly

Chapter 29

THE BEVEL (BECKER) TECHNIQUE FOR FLEXOR TENDON REPAIR	213
---	-----

Hilton Becker and John A. I. Grossman

<i>Chapter 30</i>	
FLEXOR TENDON GRAFTS IN THE HAND	217
<i>Raoul Tubiana</i>	
<i>Chapter 31</i>	
FLEXOR TENDON GRAFTING AFTER LONG DELAYS	244
<i>Robert Guy Pulvertaft</i>	
<i>Chapter 32</i>	
TENDON RECONSTRUCTION WITH IMPLANTS	255
<i>James M. Hunter, Scott H. Jaeger, Daniel I. Singer, and Evelyn J. Mackin</i>	
<i>Chapter 33</i>	
LATE REPAIR OF ZONE II FLEXOR TENDONS IN UNFAVORABLE CASES (PEDICLE TENDON GRAFT)	280
<i>E. Paneva-Holevich</i>	
<i>Chapter 34</i>	
TOTAL ANTERIOR TENOARTHROLYSIS	297
<i>P. Saffar</i>	
<i>Chapter 35</i>	
TENDON HOMOGRAFTS	304
<i>John T. Hueston</i>	
<i>Chapter 36</i>	
EVALUATION OF RESULTS AFTER FLEXOR TENDON REPAIR	308
<i>Raoul Tubiana, Stanley Gordon, John A. I. Grossman, and Peter McMeniman</i>	
<i>Chapter 37</i>	
RESULTS OF FLEXOR TENDON SURGERY IN ZONE II	315
<i>James W. Strickland</i>	
<i>Chapter 38</i>	
SURGICAL INDICATIONS IN FLEXOR TENDON INJURIES	330
<i>Raoul Tubiana</i>	
<i>Chapter 39</i>	
PRIMARY REPAIR OF FLEXOR TENDONS IN CHILDREN	354
<i>Alain Gilbert and Alain Masquelet</i>	
<i>Chapter 40</i>	
LATE TREATMENT OF INJURIES OF THE FLEXOR TENDONS IN CHILDREN	359
<i>Julien Glicenstein and Caroline Leclercq</i>	

PART TWO—SURGERY OF NERVES

Section 1 Introduction

Chapter 41

EVOLUTION OF THE CONCEPTS AND TECHNIQUES USED
IN THE REPAIR OF PERIPHERAL NERVES..... 367

Raoul Tubiana

Section 2 Anatomy, Biology, and Examination

Chapter 42

THE BIOLOGY OF REGENERATION IN PERIPHERAL NERVES..... 383

Jean-Claude Mira

Chapter 43

SURGICAL ANATOMY OF THE PERIPHERAL NERVES 405

Yves Allieu and François Bonnel

Chapter 44

RECENT ADVANCES IN PERIPHERAL NERVE SURGERY:
BASIC RESEARCH AND CLINICAL APPLICATION..... 424

*Joel Engel, Abraham Ganel, Batia Yaffe, Sarah Pri-Chen, Sarah Rimon,
and Yeheskell Shemesh*

Biochemical Compounds Affecting Nerve Anastomosis
and Nerve Degeneration 425

Batia Yaffe

Nerve Growth: In Vitro and In Vivo Studies 427

Sarah Pri-Chen and Sarah Rimon

Nerve Fascicle Identification 430

Abraham Ganel and Joel Engel

Cortical Monitoring—Somatosensory Evoked Potentials..... 433

Yeheskell Shemesh

Chapter 45

ELECTROPHYSIOLOGICAL TECHNIQUES IN SURGERY OF PERIPHERAL
NERVES SERVING THE HAND..... 438

Julia K. Terzis

Chapter 46

INTRAOPERATIVE ELECTRONEUROMYOGRAPHIC INVESTIGATION OF
PERIPHERAL NERVE LESIONS IN CONTINUITY..... 446

Paolo Bedeschi

Chapter 47

CLINICAL EXAMINATION AND FUNCTIONAL ASSESSMENT
OF THE UPPER LIMB AFTER PERIPHERAL NERVE LESIONS..... 453

Raoul Tubiana

Chapter 48

SENSIBILITY EVALUATION..... 489

Evelyn J. Mackin

Chapter 49

PARALYSIS OF THE PERIPHERAL NERVES.....	509
---	-----

Raoul Tubiana

Chapter 50

NERVE REGENERATION AND PROGNOSIS FOLLOWING PERIPHERAL NERVE INJURY	520
---	-----

Raoul Tubiana

Chapter 51

END RESULT ASSESSMENT FOLLOWING NERVE REPAIR AND ITS IMPLICATIONS.....	528
---	-----

Sydney Sunderland

Section 3 Peripheral Nerve Repair

Chapter 52

SURGICAL APPROACHES TO THE NERVES OF THE UPPER LIMB	539
---	-----

Marius Fahrer

Chapter 53

GENERAL PRINCIPLES OF NERVE REPAIR.....	548
---	-----

Donal M. Brooks

Chapter 54

NERVE ANASTOMOSIS AND GRAFT WITH FIBRIN GLUE.....	554
---	-----

Alain Gilbert

Chapter 55

TECHNIQUE OF PERIPHERAL NERVE REPAIR.....	557
---	-----

Hanno Millesi

Chapter 56

DONOR SITES FOR NERVE GRAFTS	579
------------------------------------	-----

Alain Gilbert, Wilson de Moura, Ricardo Salazar-Lopez, and John A. I. Grossman

Chapter 57

VASCULARIZED NERVE GRAFTS.....	587
--------------------------------	-----

Jean-Jacques Comtet

Chapter 58

MICROSURGICAL REPAIR IN 150 PATIENTS WITH LESIONS OF THE MEDIAN AND ULNAR NERVES.....	595
--	-----

Michel Merle, Philippe Amend, and Jacques Michon

Section 4 The Brachial Plexus

Chapter 59

TRAUMATIC LESIONS OF THE BRACHIAL PLEXUS: RECENT ADVANCES IN MANAGEMENT AND SURGICAL INDICATIONS..	603
---	-----

Raoul Tubiana

Chapter 60

TRAUMATIC BRACHIAL PLEXUS PALSY IN ADULTS	607
---	-----

Jean-Yves Alnot

Chapter 61

BRACHIAL PLEXUS LESIONS: CLASSIFICATION AND OPERATIVE TECHNIQUE	645
--	-----

Hanno Millesi

Chapter 62

NEUROTIZATION OR NERVE TRANSFER IN TRAUMATIC BRACHIAL PLEXUS LESIONS.....	656
--	-----

Algimantas O. Narakas

Chapter 63

RESULTS OF MICROSURGICAL REPAIR OF BRACHIAL PLEXUS LESIONS.....	684
--	-----

Laurent Sedel

Chapter 64

SURGICAL INDICATIONS IN TRAUMATIC LESIONS OF THE BRACHIAL PLEXUS	686
---	-----

Ezio Morelli and Pier Luigi Raimondi

Chapter 65

MANAGEMENT OF BRACHIAL PLEXUS INJURIES	689
--	-----

C. B. Wynn Parry

PART THREE—SURGERY OF VESSELS

Chapter 66

INVESTIGATION OF THE CIRCULATION OF THE HAND.....	697
---	-----

*Jean-Pierre Melki, Marie-Claire Riche, C. Francheschi, Daniel Reizine,
and Jean-Jacques Merland*

Chapter 67

VASCULAR INJURIES IN THE UPPER EXTREMITY	716
--	-----

Jesse B. Jupiter and Harold E. Kleinert

PART FOUR—SPECIAL INJURIES

Section 1 Burns

INTRODUCTION.....	755
-------------------	-----

Raoul Tubiana

Chapter 68

THERMAL AND CHEMICAL BURNS	756
----------------------------------	-----

Serge Baux

Chapter 69

MANAGEMENT OF ACUTE THERMAL HAND INJURIES.....	766
--	-----

*Conrado C. Bondoc, William C. Quinby, Jr., John Siebert, John A. I. Grossman,
and John F. Burke*

Chapter 70

THE MANAGEMENT OF HAND BURNS: A CONSERVATIVE APPROACH WITH PRESERVATION OF MAXIMAL FUNCTION	775
--	-----

Guy Trengove-Jones

Chapter 71

ELECTRICAL INJURIES OF THE UPPER LIMB	779
---	-----

John A. E. Hobby and James Ellsworth Laing

Chapter 72

ACUTE HAND BURNS IN CHILDREN—SPECIAL CONSIDERATIONS	788
---	-----

John A. I. Grossman and P. Esteve

Chapter 73

BURNS OF THE UPPER LIMB: MEDICAL AND SURGICAL TREATMENT...	794
--	-----

Maurice Rouso and Menachem Ron Wexler

Chapter 74

THE FOREARM FLAP IN RECONSTRUCTION OF BURNS OF THE HAND ..	819
--	-----

Ti-Sheng Chang

Section 2 Cold Injuries

Chapter 75

COLD INJURIES IN THE ADULT PATIENT	831
--	-----

John A. Boswick, Jr.

Chapter 76

COLD INJURIES IN CHILDREN	837
---------------------------------	-----

Robert W. Harris

Section 3 Irradiation Injuries

Chapter 77

EFFECTS OF RADIATION ON THE HANDS.....	843
--	-----

Maurice Tubiana

Chapter 78

RADIODERMATITIS OF THE HAND	849
-----------------------------------	-----

Claude Dufourmentel and Jacques Beres

Chapter 79

SURGICAL TREATMENT OF POSTACTINIC LESIONS OF THE BRACHIAL PLEXUS	857
---	-----

Giorgio Brunelli

Section 4 Infection Injuries

Chapter 80

INFECTION INJURIES OF THE HAND	867
--------------------------------------	-----

Lee W. Milford, Jr., and Richard T. D'Alonzo

Chapter 81

BITES AND STINGS OF THE HAND	873
------------------------------------	-----

Clifford C. Snyder and Larry G. Leonard

Section 5 War Injuries

Chapter 82

WAR INJURIES OF THE HAND	903
--------------------------------	-----

George E. Omer, Jr.

Section 6 Sports-Related Injuries

Chapter 83

THE SPORTSMAN'S HAND	925
----------------------------	-----

Yves Allieu

PART FIVE—TRAUMATIC AMPUTATIONS IN THE HAND

Section 1 Prehension in the Mutilated Hand

INTRODUCTION	945
--------------------	-----

Raoul Tubiana

Chapter 84

PREHENSION IN THE MUTILATED HAND	947
--	-----

Raoul Tubiana

Section 2 Replantation

Chapter 85

THE ROLE OF MICROSURGICAL TECHNIQUES OF TREATMENT OF UPPER LIMB AMPUTATION	951
---	-----

Viktor E. Meyer

Chapter 86

TECHNIQUE AND RESULTS OF DIGITAL AND UPPER LIMB REPLANTATION	972
---	-----

Alfred Berger and Hanno Milesi

Chapter 87

DIGITAL AND UPPER LIMB REPLANTATION	983
---	-----

Harry J. Buncke and Frederick A. Valauri

Chapter 88

INDICATIONS FOR REPLANTATION	1001
------------------------------------	------

Dominique Le Viet and Vladimir Mitz

Chapter 89

THE REPAIR OF FLEXOR TENDONS WITHIN THE DIGITAL SHEATH AT THE TIME OF REPLANTATION OR REVASCULARIZATION	1007
--	------

James B. Steichen, Rodger D. Powell, and Jerry L. Ellstein

Section 3 Partial and Total Amputations of the Fingers

Chapter 90

DISTAL DIGITAL REPLANTATION	1023
-----------------------------------	------

Jacques Baudet and L. Vidal

Chapter 91

TRAUMATIC AMPUTATION OF THE PHALANGES	1032
---	------

Raoul Tubiana

Chapter 92

FINGER TIP INJURIES	1034
---------------------------	------

Raoul Tubiana

Chapter 93

SURGICAL REPAIR AFTER TRAUMATIC AMPUTATIONS OF THE PROXIMAL AND MIDDLE PHALANGES	1055
---	------

Raoul Tubiana

Chapter 94

TECHNIQUE OF DIGITAL TRANSPOSITION	1065
--	------

Jean-Pierre Razemon

Chapter 95

TRANSPOSITION OF THE FIFTH DIGITAL RAY BY INTRACARPAL OSTEOTOMY	1071
--	------

Dominique Le Viet

Section 4 Partial and Total Amputations of the Thumb

Chapter 96

THUMB RECONSTRUCTION AFTER PARTIAL AMPUTATION OF THE THUMB	1081
---	------

Dieter Buck-Gramcko

Chapter 97

COMPLETE AMPUTATION OF THE THUMB	1100
--	------

Raoul Tubiana

Chapter 98

RECONSTRUCTION OF THE THUMB BY SKIN TUBE, BONE GRAFT, AND SENSORY ISLAND FLAP TECHNIQUE	1102
--	------

Raoul Tubiana

<i>Chapter 99</i>	
POLLICIZATIONS	1111
<i>Raoul Tubiana</i>	
<i>Chapter 100</i>	
POLLICIZATION OF THE INDEX FINGER	1121
<i>W. Littler</i>	
<i>Chapter 101</i>	
OTHER TECHNIQUES OF POLLICIZATION.....	1128
<i>Raoul Tubiana</i>	
<i>Chapter 102</i>	
TRANSLATION POLLICIZATION	1138
<i>Jacques Rouillet</i>	
<i>Chapter 103</i>	
THUMB RECONSTRUCTION USING MICROVASCULAR TECHNIQUES....	1142
<i>Alain Gilbert</i>	
<i>Chapter 104</i>	
THUMB RECONSTRUCTION BY USE OF A WRAP-AROUND FLAP FROM THE BIG TOE	1152
<i>Wayne A. Morrison</i>	
<i>Chapter 105</i>	
FUNCTIONAL COMPARISON BETWEEN POLLICIZATION AND TOE TO HAND TRANSFER FOR THUMB RECONSTRUCTION	1157
<i>Jacques Michon, Michel Merle, and Guy Foucher</i>	
<i>Chapter 106</i>	
SURGICAL INDICATIONS IN MUTILATIONS OF THE THUMB.....	1168
<i>Raoul Tubiana and Alain Gilbert</i>	
Section 5 Complex Amputations	
<i>Chapter 107</i>	
MUTILATIONS INVOLVING THE THUMB AND SEVERAL FINGERS	1181
<i>Raoul Tubiana</i>	
<i>Chapter 108</i>	
PHALANGIZATION OF THE METACARPALS	1190
<i>Raoul Tubiana</i>	
<i>Chapter 109</i>	
PROXIMAL RADIAL HEMIAMPUTATION: RECONSTRUCTION OF PREHENSION BY FREE CROSS HAND DIGITAL TRANSPLANTATION	1210
<i>Ueli Büchler</i>	
<i>Chapter 110</i>	
BILATERAL HAND MUTILATIONS.....	1216
<i>Raoul Tubiana</i>	

Chapter 111

KRUKENBERG'S OPERATION	1232
------------------------------	------

P. Maurer

Chapter 112

PEDICLE TRANSFER OF THE HAND.....	1236
-----------------------------------	------

Jacques Rouillet

Chapter 113

PARTIAL TOE RECONSTRUCTION IN RECONSTRUCTION SURGERY OF THE HAND.....	1241
--	------

Guy Foucher and F. M. Braun

Chapter 114

REVASCULARIZED AND REINNERVATED TRANSFERS IN MUTILATIONS OF THE HAND.....	1250
--	------

Claude Le Quang

INDEX.....	1277
------------	------
