

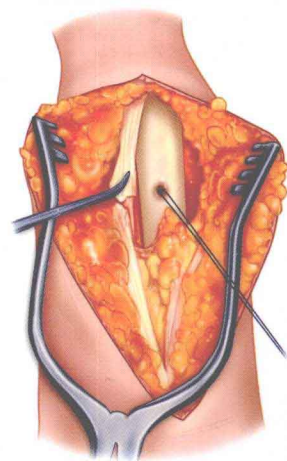
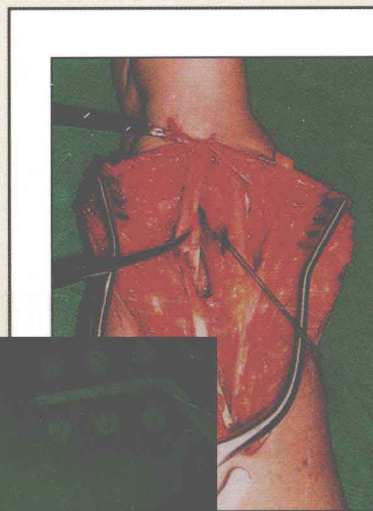
骨科手术操作技术丛书

手和腕关节手术技术 (第2卷)

Operative Techniques: Hand and Wrist Surgery (Volume 2)

原著 Kevin C. Chung (钟启光)

主译 田光磊 陈山林 田文



北京大学医学出版社

骨科手术操作技术丛书

手和腕关节手术技术

Operative Techniques: Hand and Wrist Surgery (Volume 2)

第 2 卷

图书在版编目 (CIP) 数据

手和腕关节手术技术. 第2卷/ (美) 钟启光主编;
田光磊等译. —北京: 北京大学医学出版社, 2010.9
(骨科手术操作技术丛书)

书名原文: Operative Techniques: Hand and Wrist Surgery
ISBN 978-7-81116-901-0

I. ①手… II. ①钟…②田…③陈…④田… III. ①手-外科手术
-图解②腕关节-关节疾病-外科手术-图解 IV.
①R658.2-64②687.4-64

中国版本图书馆CIP数据核字 (2010) 第042312号

北京市版权局著作权合同登记号: 图字: 01-2008-3467

Operative Techniques: Hand and Wrist Surgery vol II

Kevin C. Chung

ISBN-13: 978-1-4160-3659-3

ISBN-10: 1-4160-3659-8

Copyright © 2008 by Saunders, an imprint of Elsevier Inc. All rights reserved.

Authorized Simplified Chinese translation from English language edition published by the Proprietor.

978-981-272-187-7

981-272-187-8

Elsevier (Singapore) Pte Ltd.

3 Killiney Road, #08-01 Winsland House I, Singapore 239519

Tel: (65) 6349-0200, Fax: (65) 6733-1817

First Published 2010

2010年出版

Simplified Chinese translation Copyright © 2010 by Elsevier (Singapore) Pte Ltd and Peking University Medical Press. All rights reserved.

Published in China by Peking University Medical Press under special agreement with Elsevier (Singapore) Pte Ltd. This edition is authorized for sale in China only, excluding Hong Kong SAR and Taiwan. Unauthorized export of this edition is a violation of the Copyright Act. Violation of this Law is subject to Civil and Criminal Penalties.

本书简体中文版由北京大学医学出版社与Elsevier (Singapore) Pte Ltd.在中国境内 (不包括香港特别行政区及台湾) 协议出版。本版仅限在中国境内 (不包括香港特别行政区及台湾) 出版及标价销售。未经许可之出口, 是为违反著作权法, 将受法律之制裁。

手和腕关节手术技术 (第2卷)

主 译: 田光磊 陈山林 田 文

出版发行: 北京大学医学出版社 (电话: 010-82802230)

地 址: (100191) 北京市海淀区学院路38号 北京大学医学部院内

网 址: <http://www.pumppress.com.cn>

E-mail: booksale@bjmu.edu.cn

印 刷: 北京圣彩虹制版印刷技术有限公司

经 销: 新华书店

责任编辑: 吕晓凤 责任校对: 金彤文 责任印制: 张京生

开 本: 889mm×1194mm 1/16 印张: 25 字数: 638 千字

版 次: 2010年11月第1版 2010年11月第1次印刷

书 号: ISBN 978-7-81116-901-0

定 价: 598.00元 (1、2卷)

版权所有, 违者必究

(凡属质量问题请与本社发行部联系退换)

译者前言

Kevin C. Chung教授等编写的《Operative Techniques: Hand and Wrist Surgery》一书分两卷，共11章。自第一章介绍麻醉技术之后，全书共介绍了82种手与腕关节外科手术技术。每个手术都包括手术适应证与治疗选择的争议、术前准备、重要相关解剖、手术步骤与手术要点、术后处理和预期结果。每章后均对与该章节内容关系密切的重要参考文献进行了概述，有利于读者进行深入阅读。

此书以介绍手术技术为主。参编作者不乏国际知名的手外科与整形外科专家，内容几乎涉及了手与腕关节外科的所有重要领域，所介绍的也都是较为成熟和广受认可的手术技术。原书作者采用了大量的手术照片对手术步骤进行了详细的讲解，对重要手术解剖和手术关键点还同时采用了大量彩色插图予以突出，有利于读者的理解和学习，具有很强的实用性。

全书由多名译者分别完成，文笔上难达一致；而且由于译者水平有限，不足与错误之处，恳请读者予以谅解和指正。

田光磊

主任医师 北京大学教授
北京积水潭医院手外科主任

著者前言（中文版）

非常欣慰这本书能翻译成中文并在中国发行。中国的手外科医生为手外科学的发展做出了很多贡献，包括在断指再植、足趾移植等方面的先驱性工作与发表的文章。对我而言，手外科是一个很有吸引力的学科。我也很高兴能看到，中国的年轻医生对手外科学的兴趣越来越大。我衷心希望这本书能成为那些刚刚迈入手外科的年轻医生的“终生伴侣”。对于精心翻译这本书的中国学者我表示衷心的感谢。我相信你们一定会喜欢书中关于各种手术方法的清晰描述和漂亮图片。当然，这并非一部百科全书。我的目的是让国际手外科权威将他们在手外科领域中的最常用的手术方法奉献给全世界的各位同行，以作为实用指南。

本书的著者们没有保留地与大家分享了他们独特的、并在实践中取得可靠的良好结果的手术方法。我的一些中国同道知道，我的第一语言是中文。因此，能用我珍爱的母语出版发行这本著作令我非常欣慰。编写这本书是我的一种奉献，希望在阅读时你们也能得到同样的感受。

钟启光

医学博士，硕士

手外科及整形外科教授

国际合作副主任

人事副院长

密西根大学医学院

电子信箱：kecchung@umich.edu

致 谢

感谢我的父母亲钟炳坤、林芳兰。

编著者名单

Nicola Borisch, MD

Assistant Professor, Orthopaedic University Hospital
Regensburg, University of Regensburg; Head of
Department for Hand Surgery, Plastic and
Reconstructive Surgery, DRK-Hospital, Baden-
Baden, Germany
Dorsal Synovectomy and Darrach Procedure;
Radiolunate Fusion; Total Wrist Fusion

David J. Bozentka, MD

Associate Professor, Department of Orthopedic
Surgery, and Chief, Hand Surgery Section,
University of Pennsylvania Medical Center,
Philadelphia, Pennsylvania
Metacarpal Fracture Fixation

Scott D. Burgess, MD

Michigan Hand Center, Grand Rapids, Michigan
Open Treatment of Oblique and Spiral Fractures
of the Proximal Phalanx; Open Treatment
of Unicondylar Fractures of the Proximal
Phalanx

Louis W. Catalano III, MD

Assistant Professor, Columbia University School of
Medicine; Attending Physician, Department of
Orthopaedic Surgery, St. Luke's Roosevelt Hospital;
Attending Physician, C.V. Starr Hand Surgery
Center, New York, New York
Volar Plate Arthroplasty; Repair of Acute Ulnar
Collateral Ligament Injury of the Thumb;
Reconstruction of Chronic Ulnar Collateral
Ligament Injury of the Thumb

Walter T. Chang, MD

Staff Physician, Southern California Permanente
Medical Group, Fontana, California
Two-Stage Flexor Tendon Reconstruction;
Techniques for Extensor Tendon Repairs

Kevin C. Chung, MD, MS

Professor of Surgery, Section of Plastic Surgery,
Department of Surgery, University of Michigan
Health System, Ann Arbor, Michigan
Anesthesia Techniques; Volar Plating of Distal Radius
Fracture; Percutaneous Pinning of Distal Radius
Fracture; Corrective Osteotomy for Distal Radius
Malunion; Stabilization of the Distal Radioulnar
Joint after Acute Injury; Suave-Kapandji
Arthrodesis for Distal Radioulnar Joint Arthritis;
Reconstruction of Lunotriquetral Ligament Tear
Using a Slip of the Extensor Carpi Ulnaris Tendon;
Wrist Arthroscopy; Radial Tunnel Release;
Abductor Pollicis Longus Transfer for Radial
Abduction of the Index Finger; Tendon Transfer
for Lateral Pinch in the Tetraplegic Patient;
Functional Muscle Transfer to Restore Elbow and
Finger Flexion for Complete Avulsion of the
Brachial Plexus; Steindler's Flexorplasty; Repair of
Zone 1 Flexor Tendon Avulsion Injury; De
Quervain's and Trigger Finger Release; Implant
Arthroplasty Using Pyrocarbon Implant; Silicone
Metacarpophalangeal Joint Arthroplasty; Total
Wrist Arthroplasty; Tendon Transfers for the
Rheumatoid Arthritis Patient; Microvascular
Second Toe-to-Thumb Transfer; Digital Arterial
Sympathectomy; Replantation; Correction
of Constriction Ring; Syndactyly Release;
Duplicated Thumb Reconstruction; Cleft Hand
Reconstruction; Flexor Carpi Ulnaris to Extensor
Carpi Radialis Brevis Transfer; Pronator Teres
Rerouting; Biceps and Brachialis Lengthening;
Dupuytren's Contracture Surgery; Incision and
Drainage of Infected Finger; Amputation

Boris J. Czermak, MD

Consultant, Division of Hand and Upper Extremity
Surgery, Department of Orthopaedic Surgery,
Schulthess Clinic, Zurich, Switzerland
Rheumatoid Thumb Reconstruction: Double
Arthrodesis of the Metacarpophalangeal and
Interphalangeal Joints; Crossed Intrinsic Tendon
Transfer

Steven Z. Glickel, MD

Associate Clinical Professor of Orthopaedic Surgery, Columbia University College of Physicians and Surgeons; Director, Hand Surgery, St. Luke's Roosevelt Hospital Center, New York, New York
Volar Plate Arthroplasty; Repair of Acute Ulnar Collateral Ligament Injury of the Thumb; Reconstruction of Chronic Ulnar Collateral Ligament Injury of the Thumb

Peter Haussmann, MD

Professor Emeritus, University of Freiburg, Freiburg; Former Chief, Department for Hand Surgery, Plastic and Reconstructive Surgery, DRK-Hospital, Baden-Baden, Germany
Dorsal Synovectomy and Darrach Procedure; Radiolunate Fusion; Total Wrist Fusion

Vincent R. Hentz, MD

Professor of Surgery, Stanford University; Robert A. Chase Center for Hand and Upper Limb Surgery, Stanford Hospital and Clinics, Stanford, California
Tendon Transfer Procedures for Low and High Median Nerve Injury; Tendon Transfer Procedures for Low and High Ulnar Nerve Injury; Tendon Transfer Procedures for Low and High Radial Nerve Injury; Tendon Transfer Procedures for Low and High Combined Median and Ulnar Nerve Injury

Carlos Heras-Palou, FRCS

Lead Clinician for Hand Surgery, Pulvertaft Hand Centre, Derby, United Kingdom
Wrist Denervation

Daniel Herren, MD, MHA

Associate Chief, Division of Hand and Upper Extremity Surgery, Department of Orthopaedic Surgery, Schulthess Clinic, Zurich, Switzerland
Rheumatoid Thumb Reconstruction: Double Arthrodesis of the Metacarpophalangeal and Interphalangeal Joints; Crossed Intrinsic Tendon Transfer

Thomas R. Hunt, III, MD

Professor of Surgery, and Director, UAB Hand and Upper Extremity Fellowship, University of Alabama at Birmingham School of Medicine; John D. Sherrill Chair of Orthopaedic Surgery, and Surgeon-in-Chief, UAB Highlands, University of Alabama at Birmingham, Birmingham, Alabama
Acute Scapholunate Ligament Reconstruction; Reconstruction of Chronic Scapholunate Ligament Disruptions Using a Flexor Carpi Radialis Tendon Graft; Wrist Denervation

Charles F. Kallina, MD, MS

Orthopedic/Hand Surgeon, Memorial Hermann The Woodlands Hospital, The Woodlands, and Sadler Clinic, Conroe, Texas
Radial Shortening Osteotomy for the Treatment of Kienböck's Disease

Seong Eon Kim, MD

Director of Plastic Surgery, Upper Extremity and Microsurgery Center, SM Christianity Hospital, Pohang, Korea
Anesthesia Techniques; Volar Plating of Distal Radius Fracture; Functional Muscle Transfer to Restore Elbow and Finger Flexion for Complete Avulsion of the Brachial Plexus; Steindler's Flexorplasty; Microvascular Second Toe-to-Thumb Transfer; Replantation; Correction of Constriction Ring; Syndactyly Release; Dupuytren's Contracture Surgery; Amputation

Scott H. Kozin, MD

Associate Professor, Department of Orthopaedic Surgery, Temple University; Upper Extremity Surgeon, Shriners Hospital for Children, Philadelphia, Pennsylvania
Centralization for Radial Deficiency; Index Pollicization; Opposition Transfer for Hypoplastic Thumb; Carpal Wedge Osteotomy for Arthrogryposis; Rotational Osteotomy of the Forearm for Congenital Radioulnar Synostosis

Victoria D. Kubik, MD

Orthopedic Surgeon, Hand and Microsurgery Specialist, St. John's Hospital and Clinic, Springfield, Missouri
Open Reduction and Internal Fixation of Transverse Phalangeal Shaft Fracture; Open Treatment of Oblique and Spiral Fractures of the Proximal Phalanx; Open Reduction and Internal Fixation of Intra-articular Fractures of the Proximal Interphalangeal Joints (Middle Phalanx Base Fractures); Open Treatment of Unicondylar Fractures of the Proximal Phalanx

Don Lalonde, MSc, MD, FRCSC

Professor of Surgery, and Department Head, Plastic Surgery, Dalhousie University; Atlantic Health Sciences Corporation, Saint John, Canada
Wide-Awake Approach to Flexor Tendon Repair

Alberto Lluch, MD, PhD

Assistant Professor, Orthopedic Surgery, Institut Kaplan, Barcelona, Spain
Swan-Neck Deformity; Boutonnière Deformity; Flexor Tendon Synovectomy

Susan E. Mackinnon, MD

Professor, and Division Chief, Plastic and Reconstructive Surgery, Washington University School of Medicine, St. Louis, Missouri
Distal Anterior Interosseous Nerve Transfer for Ulnar Motor Reinnervation; Median to Radial Motor Nerve Transfer; Sensory Nerve Transfers

Roy A. Meals, MD

Clinical Professor of Orthopedic Surgery, University of California at Los Angeles, Los Angeles, California
Two-Stage Flexor Tendon Reconstruction; Techniques for Extensor Tendon Repairs

Wyndell H. Merritt, MD, FACS

Clinical Professor of Surgery, Medical College of Virginia, Virginia Commonwealth University, Richmond, Virginia
Digital Arterial Sympathectomy

Terence M. Mykатыn, MD

Assistant Professor of Plastic and Reconstructive Surgery, Washington University School of Medicine; Assistant Professor of Plastic and Reconstructive Surgery, Barnes-Jewish Hospital, St. Louis, Missouri
Distal Anterior Interosseous Nerve Transfer for Ulnar Motor Reinnervation; Median to Radial Motor Nerve Transfer; Sensory Nerve Transfers

Wendy L. Parker, MD, PhD, FRCSC

Assistant Professor, Plastic and Reconstructive Surgery, and Hand and Wrist Surgery, McGill University; Jewish General Hospital; St. Mary's Hospital, Montreal, Quebec, Canada
Pedicled Vascularized Bone Graft from the Dorsal Distal Radius for the Treatment of Kienböck's Disease

William C. Pederson, MD

Clinical Associate Professor, Departments of Surgery and Orthopaedic Surgery, The University of Texas Health Science Center at San Antonio; Director of Fellowship Training, and President, The Hand Center of San Antonio, San Antonio, Texas
Intrinsic Hand Flaps: The Digital Artery Island Flap; Intrinsic Hand Flaps: The Kite Flap (First Dorsal Metacarpal Artery Flap); Ulnar Artery Bypass for Ulnar Artery Thrombosis in the Hand; Pedicle Radial Forearm Flap

Matthew D. Putnam, MD

Professor of Orthopaedics, Hand and Upper Limb Specialist, and Director, Hand Surgical Fellowship, University of Minnesota, Minneapolis, Minnesota
Stabilization of the Distal Radioulnar Joint after Acute Injury; Suave-Kapandji Arthrodesis for Distal Radioulnar Joint Arthritis

Ghazi M. Rayan, MD

Clinical Professor of Orthopedic Surgery, Oklahoma University; Director of Oklahoma Hand Fellowship Program, and Chairman of Hand Surgery Division, INTEGRIS Baptist Medical Center, Oklahoma City, Oklahoma
Carpal Tunnel Release; Cubital Tunnel Release

Alexander Y. Shin, MD

Consultant, Division of Hand Surgery, Department of Orthopedic Surgery, Mayo Clinic; Professor of Orthopedic Surgery, Mayo Medical School, Rochester, Minnesota
Pedicled Vascularized Bone Graft from the Dorsal Distal Radius for the Treatment of Kienböck's Disease; Proximal Row Carpectomy; Radial Shortening Osteotomy for the Treatment of Kienböck's Disease

Peter J. Stern, MD

Norman S. and Elizabeth C.A. Hill Professor and Chairman of Orthopaedic Surgery, Department of Orthopaedic Surgery, and Founder and Co-Director, Mary S. Stern Fellowship in Hand Surgery, University of Cincinnati College of Medicine, Cincinnati, Ohio
Open Reduction and Internal Fixation of Transverse Phalangeal Shaft Fracture; Open Treatment of Oblique and Spiral Fractures of the Proximal Phalanx; Open Reduction and Internal Fixation of Intra-articular Fractures of the Proximal Interphalangeal Joints (Middle Phalanx Base Fractures); Open Treatment of Unicondylar Fractures of the Proximal Phalanx

Chau Y. Tai, MD

Director, Hand and Microsurgery, Division of Plastic and Reconstructive Surgery, Division of Orthopedic Surgery, Kern Medical Center, Bakersfield, California
Distal Anterior Interosseous Nerve Transfer for Ulnar Motor Reinnervation; Median to Radial Motor Nerve Transfer; Sensory Nerve Transfers

Matthew M. Tomaino, MD, MBA

Professor of Orthopaedics, University of Rochester Medical Center, University of Rochester, Rochester, New York
Resection Arthroplasty of the Thumb Basilar Joint; Thumb Basilar Joint Ligament Reconstruction

Raymond Tse, MD, FRCSC

Assistant Professor, Division of Plastic and Reconstructive Surgery, Department of Surgery, University of Western Ontario, London, Ontario, Canada

Tendon Transfer Procedures for Low and High Median Nerve Injury; Tendon Transfer Procedures for Low and High Ulnar Nerve Injury; Tendon Transfer Procedures for Low and High Radial Nerve Injury; Tendon Transfer Procedures for Low and High Combined Median and Ulnar Nerve Injury

Thomas H. Tung, MD

Assistant Professor of Plastic and Reconstructive Surgery, Washington University School of Medicine, and Barnes-Jewish Hospital, St. Louis, Missouri

Distal Anterior Interosseous Nerve Transfer for Ulnar Motor Reinnervation; Median to Radial Motor Nerve Transfer; Sensory Nerve Transfers

Ann E. Van Heest, MD

Associate Professor, Department of Orthopedic Surgery, University of Minnesota, Minneapolis; Hand Service Director, Shriners Hospital for Children, Twin Cities Unit; Hand Service Director, Gillette Children's Specialty Care, St. Paul, Minnesota

Fractional Lengthening of the Flexor Tendons; Superficialis to Profundus Tendon Transfer; Flexor-Pronator Slide; Intrinsic Muscle Release for Thumb-in-Palm Deformity

Jennifer Moriatis Wolf, MD

Assistant Professor, Department of Orthopaedics, University of Colorado Health Sciences Center, Denver, Colorado

Proximal Row Carpectomy

Hiroshi Yajima, MD

Associate Professor, Department of Orthopedic Surgery, Nara Medical University, Kashihara, Nara, Japan

Open Reduction and Internal Fixation of Scaphoid Fracture Using the Cannulated Herbert Screw; Vascularized Bone Grafting from the Distal Radius for Scaphoid Nonunion

目 录

第一卷

第一部分 麻 醉

手术操作1	麻醉方法	2
-------	------------	---

第二部分 指骨折和脱位

手术操作2	切开复位内固定术治疗指骨干横断骨折	14
手术操作3	切开复位内固定术治疗近节指骨斜形或螺旋形骨折	21
手术操作4	切开复位内固定术治疗近指间关节内骨折（中节指骨基底骨折）	27
手术操作5	近节指骨单髁骨折的切开复位内固定	33
手术操作6	掌板成形术	39
手术操作7	拇指掌指关节尺侧副韧带急性损伤的修复	48
手术操作8	拇指掌指关节尺侧副韧带陈旧损伤的重建	58
手术操作9	掌骨骨折固定术	68

第三部分 腕关节

手术操作10	掌侧接骨板固定治疗桡骨远端骨折	88
手术操作11	经皮穿针固定治疗桡骨远端骨折	98
手术操作12	桡骨远端骨折畸形愈合截骨矫形术	109
手术操作13	急性桡尺远侧关节损伤后的固定	119
手术操作14	Suave-Kapandji关节融合术治疗桡尺远侧关节炎	124
手术操作15	急性舟月韧带损伤的重建	133
手术操作16	桡侧腕屈肌腱移植重建陈旧性舟月韧带断裂	143
手术操作17	尺侧腕伸肌腱移位重建月三角韧带	152
手术操作18	腕关节神经切断术	161
手术操作19	舟骨骨折切开复位Herbert空心螺钉内固定	169
手术操作20	带血管桡骨远端骨瓣移植治疗舟骨骨折不愈合	180
手术操作21	带血管桡骨远端骨瓣移植治疗月骨缺血坏死	189
手术操作22	近排腕骨切除术	204
手术操作23	桡骨短缩截骨术治疗月骨缺血坏死	211

手术操作24	腕关节镜	217
--------	------------	-----

第四部分 神经和肌腱移位

手术操作25	腕管松解术	232
手术操作26	肘管松解术	252
手术操作27	桡管松解术	266
手术操作28	肌腱移位治疗低位和高位正中神经损伤	271
手术操作29	肌腱移位治疗低位和高位尺神经损伤	288
手术操作30	肌腱移位治疗低位和高位桡神经损伤	309
手术操作31	肌腱移位治疗低位和高位正中神经合并尺神经损伤	320
手术操作32	拇长展肌移位重建示指桡侧外展	338
手术操作33	肌腱移位重建四肢瘫患者的侧捏功能	342
手术操作34	全臂丛神经撕脱伤后功能性肌肉移位屈肘屈指功能重建术	354
手术操作35	Steindler 屈肌成形术	373
手术操作36	骨间前神经终支移位修复尺神经运动支	383
手术操作37	正中神经移位修复桡神经运动支	389
手术操作38	感觉神经移位术	395

第二卷

第五部分 肌腱疾患

手术操作39	指屈肌腱 I 区撕脱伤的修复	402
手术操作40	完全清醒状态下的指屈肌腱修复术	409
手术操作41	指屈肌腱二期功能重建	417
手术操作42	指伸肌腱修复术	433
手术操作43	桡骨茎突狭窄性腱鞘炎及扳机指松解术	444

第六部分 骨关节疾患

手术操作44	拇腕掌关节切除成形术	450
手术操作45	拇腕掌关节韧带重建	458
手术操作46	热解碳假体植入性关节成形术	464

第七部分 类风湿关节炎

手术操作47	背侧入路滑膜切除术及Darrach手术	486
手术操作48	桡月关节融合术	502
手术操作49	全腕关节融合术	507

手术操作50	拇指类风湿关节炎的重建手术：掌指关节与指间关节双融合	518
手术操作51	内在肌交叉移位术	523
手术操作52	鹅颈畸形	529
手术操作53	钮孔畸形	538
手术操作54	屈肌腱滑膜切除术	545
手术操作55	掌指关节硅胶假体关节成形术	553
手术操作56	全腕关节置换术	565
手术操作57	类风湿关节炎患者肌腱移位术	579

第八部分 皮瓣与显微外科

手术操作58	手内局部皮瓣：指动脉岛状皮瓣	590
手术操作59	手内局部皮瓣：风筝皮瓣（第一掌骨背动脉皮瓣）	594
手术操作60	尺动脉血栓的血供重建术	598
手术操作61	前臂桡动脉带蒂皮瓣	602
手术操作62	（吻合血管的）第二足趾游离移植再造拇指	606
手术操作63	指动脉交感神经剥离术	621
手术操作64	再植术	627

第九部分 先天性疾病

手术操作65	先天性绞窄环的矫正	636
手术操作66	并指分指术	643
手术操作67	多拇指畸形重建手术	652
手术操作68	裂手畸形重建手术	659
手术操作69	桡侧纵列缺如的中央化	668
手术操作70	示指拇化术	676
手术操作71	肌腱移位重建拇对掌功能治疗拇指发育不良	687
手术操作72	腕骨楔形截骨治疗关节挛缩症	698
手术操作73	前臂旋转截骨治疗先天性桡尺骨融合	705

第十部分 痉挛性疾病

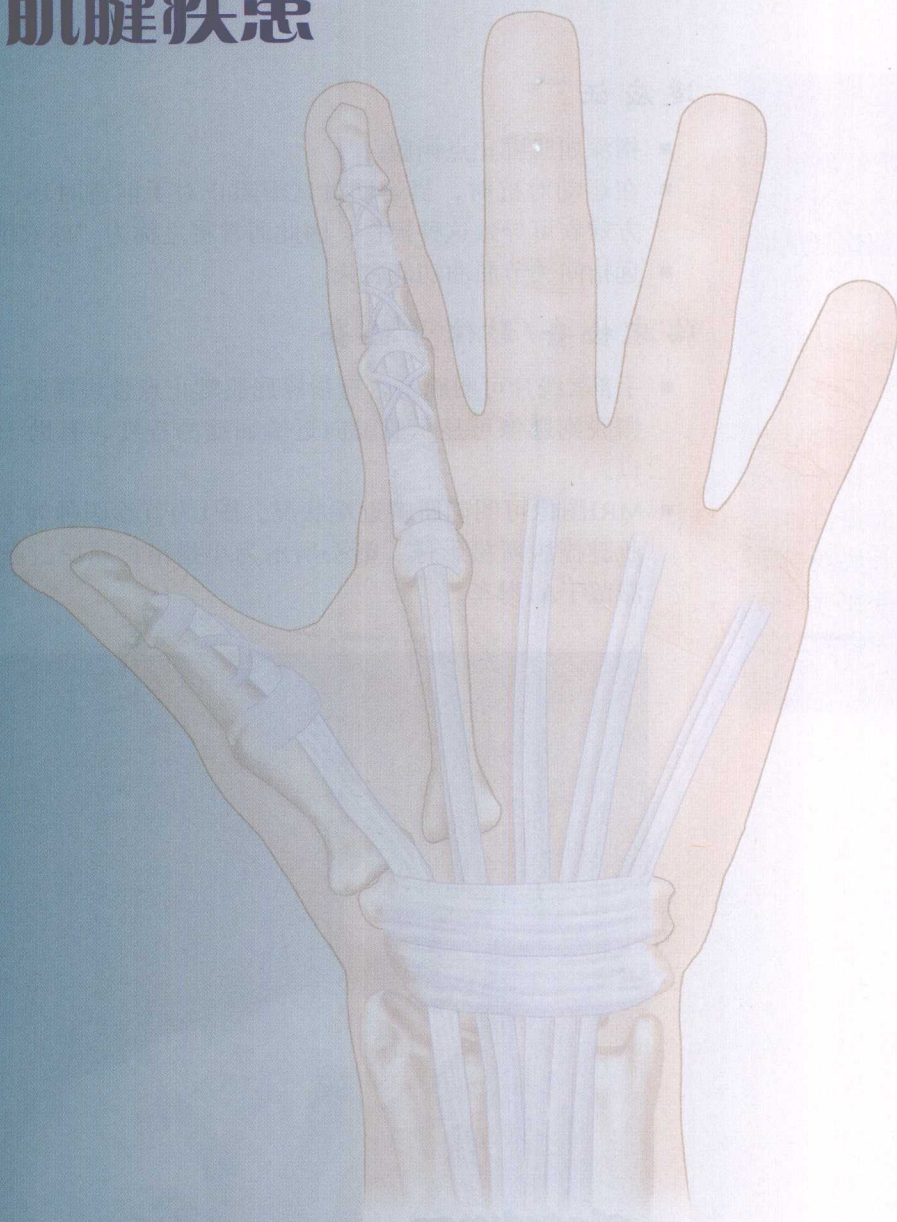
手术操作74	屈肌腱部分延长术	714
手术操作75	“浅代深”肌腱移位术	720
手术操作76	旋前屈曲肌群起点前移术	726
手术操作77	拇指内收畸形的内在肌松解术	730
手术操作78	尺侧腕屈肌至桡侧腕短伸肌移位术	734
手术操作79	旋前圆肌止点重置术	741
手术操作80	肱二头肌腱和肱肌腱延长术	751

第十一部分 掌腱膜挛缩症及其他

手术操作81	掌腱膜挛缩症的手术治疗	758
手术操作82	手指感染的切开引流	771
手术操作83	截指术	777

第五部分

肌腱疾患



39 指屈肌腱 I 区撕脱伤的修复

Kevin C. Chung

其他治疗方法

- 指屈肌腱 I 区撕脱伤处理很困难，而且预后差异较大，由于肌腱损伤程度不一，功能恢复很难预测。
- 如果指浅屈肌腱的连续性存在，则可选择远指间关节融合术。
- 在少数情况下，指深屈肌腱带着其止点处的骨块撕脱，该骨块会撞击指浅屈肌腱，此时损伤的深肌腱与浅肌腱粘连。骨块嵌顿导致屈指角度减少，因此在远指间关节融合时需同时切除指深屈肌腱。

适应证

- 指深屈肌腱止点撕脱。
- 在运动对抗时，当运动员试图阻止对手前进时环、小指拉拽对方球衣可导致这种损伤，因此通常将之称为“球衣手”。
- 远指间关节屈曲功能丧失。

临床检查/影像学检查

- 手部X线片可明确是否有指深屈肌腱止点骨块撕脱。如果有骨性撕脱则影像可显示肌腱向近端回缩的程度，有助于选择探查切口。
- MRI图像可明确肌腱近端状况。图1为首诊医师为了明确指深屈肌腱撕脱所摄影像。箭头所示为小指指深屈肌腱断裂后近断端滞留于A1滑车。



图1

外科解剖

- 指深屈肌腱撕脱后近端可回缩到3个不同部位。由于PIP处的腱纽限制了肌腱的回缩，指深屈肌腱近断端可回缩到A4或A2滑车的水平。然而，当暴力足以撕裂腱纽时，肌腱近断端也可回缩到A1滑车水平。
- 大多数病例中，肌腱断端可通过鞘管系统牵出，并可用抽出式纽扣法缝合固定于其骨性止点。少数情况下，肌腱断端无挫裂伤，远端部分也有足够长度，则可一期修复。
- 伤后4周以上就诊的患者，其肌腱水肿、肌腹挛缩，导致肌腱无法直接缝合。该类患者需取肌腱移植，从A1滑车桥接到肌腱止点。

体位

- 患者取仰卧位，指根麻醉或区域阻滞麻醉下手术。
- 如果掌长肌腱不可用，则需备下肢取跖肌腱。

入路/显露

- 手指Z形的Brunner切口可使显露充分。

手术操作

步骤1

- 男性，50岁，4周前遛狗时被带子从手指拽过，该男子立刻注意到右手小指远指间关节主动屈曲功能丧失（图2A和2B）。
- X线片显示骨性止点无撕脱。首诊医师行MRI检查，显示小指指深屈肌腱撕脱（图1箭头指向肌腱断端）。
- Z形Brunner切口显露肌腱远端，可见仍有1cm腱束止于远节指骨。

手术要点

- 不要使用导管牵拉肌腱，而应轻柔地将肌腱推进A1滑车内。导管轻柔地牵拉肌腱的同时从近端推移肌腱可使肌腱无创地通过腱鞘。