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Wei Wang • Jianmin Yao
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Congenital Deformities of the Hand and Upper Limb

Plastic and Reconstructive Surgery



 Springer

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Profile of Chief Editors of *Congenital Deformities of Hands and Upper Limbs*



Wei Wang Wang Wei is a tenured professor of plastic surgery and one of the founders of the Chinese Plastic and Reconstructive Surgery Association and Plastic Surgery Branch of the Chinese Medical Doctor Association as well as an international editorial board member of *Plastic and Reconstructive Surgery*. He has successively served as chairman, vice chairman, member of standing committee, associate editor, and editorial board member of over 30 associations and journals at home and abroad.

He started his career in plastic surgery with a master's degree in 1961. When he was a senior in college, he was elected as a physician of the Cardiology Department of Shanghai Ruijin Hospital and has been in charge of 26 sickbeds for half a year. From 1981 to 1982, he was a visiting scholar and visiting professor at Baylor College of Medicine in the United States. Since 1967, he has served as the discipline leader, deputy director (executive) and director, and leader of Shanghai's key medical disciplines as well as an academic leader of the "211 Project" for the Ministry of Education.

He reported and published over 40 leading achievements at home and abroad. For example, in 1965, he reported *An Experimental Study on Free Replantation of Skin Tissues*. In 1975, he applied the dorsal island flap grafting and free grafting. In 1977, he performed cervical esophageal reconstruction with a free jejunum flap and a jejunum-esophagus grafting as well as cervical and thoracic esophageal reconstruction with a proximal jejunal pedicle and a distal anastomosis grafting. In 1985, he was hailed as the "world's most experienced doctor in esophageal reconstruction with intestinal grafting" by American scholars. In 1990, he created cervical esophageal reconstruction with the pectoral musculoskin flap grafting. In 1991, he created cervical esophageal reconstruction with the tubular latissimus dorsi flap. In 1977, he expanded this technique to second-toe transplantation. In 1979, he created a treatment for postburn claw hand with the superficial temporal fascia flap and skin grafting. That year, he also performed island skin flap grafting in the medial plantar and of the metatarsophalangeal joint flap grafting with a 0.8 cm × 5.0 cm area of skin, nerves, and blood vessels, which were used for hand or temporomandibular joint reconstruction. In 1980, he and Yang Guofan reported a free forearm flap grafting. In 1980, he proposed in *Medical Encyclopedia* that the free forearm flap grafting be used for cervical esophageal or penile reconstruction, creating the grafting of the reversed forearm island flap. In 1982, he reported the etiology and classification of lymphedema. In the same year, he created the treatment of traumatic anal sphincter reconstruction with the greatest gluteal muscle flap grafting and subsequently used it for anal sphincter reconstruction to treat colorectal cancer in situ. In 1985, he created Y-shaped microvascular anastomosis method. In 1989, he reported the treatment for advanced facial nerve paralysis with the grafting of free latissimus dorsi muscle (Phase I). In 1995, he performed treatment for advanced facial nerve paralysis (Phase I) with the grafting of the latissimus dorsi muscle free flap. He has many innovative achievements in classification of thumb dysplasia, aesthetic reconstruction, modern

abdominoplasty, augmentation mammoplasty with prosthetics, facial contour beautification, eyelid and nasal surgery, and other fields. Since 1984, he has been engaged in the practice of “plastic surgery” and “cosmetic surgery.”

He prepared the *Rules for Training Chinese Orthopedic Surgeons* and *Rules for the Scope and Classification of Plastic Surgeries* for the competent department. The majority of surgeons under his guidance have become academic leaders of provinces and municipalities. He also trained over 20 professors and surgeons for the United States, the United Kingdom, Italy, and other countries.

He has won the National Invention Award for over 20 times. He is listed in the *History of Microsurgery* and *Who's Who* as a medical celebrity.



Jianmin Yao Yao Jianmin, a chief physician, was awarded the title “Top 10 Young Doctors” in Hangzhou in 1991. In 1982, he graduated from the Hangzhou Campus of Zhejiang Medical University. Currently, he is an academic leader in Hangzhou’s medical hand surgery key specialties, a standing committee member of the Hand Surgery Branch for Zhejiang Medical Association, a member of the Plastic Surgery Branch of Zhejiang Medical Association, vice chairman of the Limb Function Reconstruction Professional Committee for Zhejiang Provincial Rehabilitation Medicine Association, and the seventh and eighth special editorial member of the *Chinese Journal of Microsurgery*.

He has published 49 academic papers, including 11 SCI papers. In 1997, he published the “Treatment of Simple Syndactyly by Reverse Insertion Method of Webbed Fascia Pedicle Skin Flap” in the journal *Plastic and Reconstructive Surgery*. Currently, he has published 22 papers in first-class Chinese journals and 12 papers that won awards. He has won first, second, and third prizes via his excellent papers at municipal, provincial, and national meetings.

His research “Breast Splitters for Mammoplasty” won a national patent. He completed nine research projects independently or by cooperating with others, which have reached a leading level at home and abroad. In addition, he has won the first, second, and third prizes of science and technology awards at the municipal level, at the provincial level, and of the Ministry of Health, respectively. In 1995, the project *Repair of Acute Thumb Avulsion with Bi-lobed Island Flap of the Second Web* won the third prize of the Zhejiang Provincial Science and Technology Progress Award. In 1997, the project *Microanatomy Research and Clinical Applications of Hand and Forearm Island Flaps* won the third prize of the Ministry of Health and the first prize of Hangzhou Science and Technology Progress Award. In 2006, he compiled the *Atlas of Clinical Surgery for Flap Repair of Hand and Foot Wounds*. In 1997, he studied at the Beckman Laser Institute & Medical Clinic of the University of California in the United States. In September 2007, he went to Luisenhospital Aachen in Germany for an exchange program. In 1997, he was listed as a third-level talent in Hangzhou Talent Education Training.

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Preface

Congenital anomaly of the hand and upper limb is a common disease. Patients with such a disease can pay a visit to a department of plastic surgery, department of pediatric surgery, department of hand surgery, department of orthopedic surgery, or department of general surgery. Therefore, it is necessary for healthcare providers to know and be familiar with this type of disease as well as its treatment.

In 1986, in the first National Symposium and Workshop of Hand Surgery held in Qingdao, the author presented the report *Classification of Congenital Hand and Upper Limb Deformities*. Thereafter, lectures on congenital deformities of the hand and upper limbs were delivered in Shanghai, Guangzhou, Beijing, Wuhan, and other places. In *Huang Jiasi Surgery* and *Plastic Surgery*, of which the author is the chief editor (1999), relevant chapters on congenital deformities of the hand and upper limbs were written. In 2004, with the assistance of the author, Professor Hong Guangxiang compiled and published *Congenital Deformities of Hands*. The book *Congenital Deformities of Hands and Upper Limbs* has been written and published based on them.

The author had the honor to invite professors and scholars in plastic surgery, hand surgery, and orthopedics from North and South China as well as in the Hand Surgery Center at University of Louisville Hospital to participate in the composition and compilation of *Congenital Deformities of the Hand and Upper Limb*. It took more than 2 years to finish the book.

During the compilation process, the authors summarized their decades of experiences and reviewed hundreds of thousands of pictures of hand deformities. In addition, they referred to over a thousand articles and books on congenital deformities of hands and upper limbs published at home and abroad.

In clinical practice, there appears to be many malpractice cases in the treatment of congenital deformities of hands and upper limbs, most of which are caused by a lack of understanding of the morphological, structural, and functional defects of hand deformities as well as inappropriate selection of treatment measures. Therefore, only when the morphological, structural, and functional defects of hand deformities are fully understood can the best therapeutic regimen be generated. To this end, hand examination method and hand function assessment method have been added to this book. Professor Tsai from the Hand Surgery Center of University of Louisville Hospital in the United States actively participated in the compilation of this book, for which the author is deeply grateful.

Although every effort has been made to compose and compile this book, shortcomings are inevitable, so any feedback is welcome.

Shanghai, China
October 18, 2014

Wei Wang

Acknowledgments

During the compilation of *Congenital Deformities of Hands and Upper Limbs*, the editors have contacted professors from famous hand surgery centers in the United States for many times, and Professor Tsai and Professor Tien from US Kleinert Kutz Hand Surgery Center have taken an active part in our compilation and made amendments and supplements to relevant chapters. We are very glad to have American peers participate in the compilation of this book, and they will be introduced as follows.

It has been over 50 years since US Kleinert Kutz Hand Surgery Center was founded, and it has a large number of famous surgeons and scholars in hand surgery. This center is currently one of the world's largest training bases of hand surgeons. From 1960 to now, a total of over 1200 surgeons from 58 countries have received professional training in the field of hand surgery here. This center owns medical bases in Louisville and Lexington in Kentucky and New Albany in Indiana, and it provides comprehensive medical services in upper limbs for patients from all over the world. During the past over five decades, Kleinert Kutz Hand Surgery Center has performed seven allogenic hand transplantations and the world's first batch of hand replantations. It has been the cutting edge in the field of free tissue transplantation and reconstruction; its research in peripheral nerve blood supply has won national honors; it is the first to report finger arterial repair, bilateral upper arm replantation, bilateral forearm replantation, and vascularized epiphysis transplantation; and it has successfully created a set of techniques in flexor tendon repair and rehabilitation.

Tsu-Min Tsai (M.D.) is a renowned specialist in hand surgery and microsurgery. Dr. Tsai once performed replantation of amputated finger for Armstrong, the one who first landed on the moon. Dr. Tsai graduated from National Taiwan University in 1961 and received the training of National Taiwan University and University of Louisville Hospital. Dr. Tsai acted as chief of surgery in Taipei Peace Hospital from 1970 to 1975. In 1976, Dr. Tsai received training at Kleinert Kutz Hand Surgery Center. Currently, Dr. Tsai is the clinical professor in orthopedics in University of Louisville Hospital, a member of the American Society for Reconstructive Microsurgery, a member of the World Society for Reconstructive Microsurgery, and an official member of the American Association for Hand Surgery. Dr. Tsai has been devoted to the clinical and research work in the field of hand surgery and microsurgery and has published a total of over 130 articles.

Huey Y. Tien (M.D.) is a renowned specialist in hand surgery and microsurgery and has treated patients with injuries in wrist joint and brachial plexus from all over the world. Dr. Tien graduated from Chung Shan Medical College in 1986. He completed the training for resident orthopedist in Taoyuan Armed Forces General Hospital and the training for resident surgeon in University of Louisville Hospital. In the last year, Dr. Tien acted as the chief resident and subsequently received specialized training in hand surgery in Kleinert Kutz Hand Surgery Center. Currently, Dr. Tien is clinical associate professor of University of Louisville Hospital, official member of the American Association for Hand Surgery and official member of the Association for the Study of Internal Fixation, and also director of Surgeon Training Department of Kleinert Kutz Hand Surgery Center.

Special thanks should go to Dr. Han Dong from the Department of Plastic Surgery of Shanghai Ninth People's Hospital, Shanghai Jiaotong University School of Medicine, who has made great efforts in the compilation of this book during his study in Kleinert Kutz Hand Surgery Center. Thanks also go to Di Jing, associate professor of Anatomy Teaching and Research Office of China Medical University for the charting in relevant chapters.

Jinghong Xu

July 2014

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