

Jian-min Yao
Jing-hong Xu
Editors

Atlas of Cleft Lip and Palate & Facial Deformity Surgery



 Springer

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Foreword

Cleft lip and palate and facial deformity surgery has been recorded for thousands of years. Numerous books and articles had been published for cleft lip and palate and facial deformity. Cleft lip and palate and facial deformity surgeries are the basic clinical skills of plastic surgeons. Plastic surgeon is “the craftsman of the human body” to some extent. To be a good plastic surgeon, we should learn more, practice more, and summarize more. So, I recommend the book *Atlas of Cleft Lip and Palate & Facial Deformity Surgery* to all plastic surgeons. It introduces the details of surgical procedures, key points, and outcomes of cleft lip and palate and facial deformity with graphs. This book will be undoubtedly of value to plastic surgeons.

The highest level of ethics is like water, so is medical ethics. A good doctor must be a noble person. Medical is a lifelong journey. The book *Atlas of Cleft Lip and Palate & Facial Deformity Surgery* written by Dr. Yao is based on his 30 years’ experience of “Operation Smile China.” Working with Dr. Han Kai, the founder of “Operation Smile China,” Dr. Yao treated more than 30 thousand children with cleft lip and palate for free. He brought them a new life with smiles. I think *Atlas of Cleft Lip and Palate & Facial Deformity Surgery* is a textbook of plastic surgery, as well as a textbook of medical ethics. So, I recommend this book to you and write this as the foreword.

Shanghai, China
July 31, 2018

Wang Wei

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Preface

Congenital cleft lip and palate is a kind of facial deformity with a high incidence. The criterion for evaluating the effect of repair lies in the aesthetic appearance and functional recovery after repair, and the former is particularly important. Without good appearance, good functions are hard to achieve for cleft lip and palate patients. Because of the different manifestations of the deformity and the different degrees of the defect in cleft lip and palate patients, the surgical methods are various. Each method has its own advantages and disadvantages. As professor *Wang Wei* said: “there is no best way of any operation, only the most suitable indications.” To make best use of the advantages and bypass the disadvantages, and in line with the principle of minimally invasive, efficient, and simple surgery, the author compiled the book *Atlas of Cleft Lip and Palate & Facial Deformity Surgery* with his colleagues. Based on the experience of various clinical operations in this field over the past 30 years, this book consists of the basic theories and comprehensive skills of surgery, plastic surgery, and maxillofacial surgery and integrates the knowledge and wisdom of dozens of experts in China. This monograph illustrates the surgical methods and procedures one by one in order to make them intuitive and easy to understand. In order to enrich the content, besides the surgical methods of cleft lip and palate, the book also introduces the repair methods of other facial deformities, which also contains the wisdom of the author and many experts and scholars. We hope that the book is self-explanatory and understandable to readers.

The book contains more than 1900 colorful surgical photographs, which are mainly from the “Operation Smile China” project of Lip and Palate Surgery and the accumulation of decades of clinical practice. This book is divided into two sections with five chapters and briefly introduces various surgical methods of cleft lip and palate, including recommended methods, alternative methods, procedures, and steps of repair surgeries by the way of pictures and graphics. It also emphasizes on describing common and practical surgical methods for cleft lip and palate and also explores innovative surgical skills and operative techniques.

The purpose of the book is to provide a high-quality bibliography for colleagues in plastic surgery, oral and maxillofacial surgery, cosmetic surgery, and otolaryngology to improve the ability of repairing cleft lip and palate and other facial deformities.

Due to the limitation of time, experience, and academic level, there are inevitably shortcomings and mistakes in this book. We urge our readers to criticize and correct them while referring to them.

Hangzhou, China
July 18, 2018

Jian-min Yao
Jing-hong Xu

Introduction

Atlas of Cleft Lip and Palate & Facial Deformity Surgery is a book which systematically introduces the classification, surgical methods, and outcomes of cleft lip and palate and facial deformities with diagrams. “Operation Smile China” offers more than 1900 photographs to this book, as well as our 30 years of clinical experience.

This book is divided into two parts. Part I contains the classification, special suture techniques, surgical procedures, and case series of cleft lip and palate. Part II mainly contains the reparation of congenital facial deformities and facial defects.

This book is suitable for junior plastic surgeons, oral surgeons, cosmetic surgeons, and otolaryngologists. We wish this book will be of benefit to improving clinical skills of reparation of cleft lip and palate and facial deformities.

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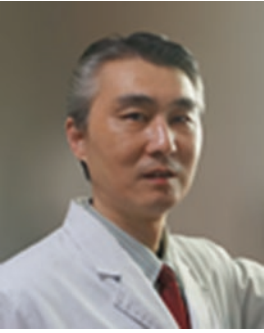
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About the Editor



Jian-min Yao is Chief surgeon, the first leader of key medical specialties in Hangzhou, a member of the fifth and sixth session of Plastic Surgery Branch of Zhejiang Medical Association, a member of the second session of Medical Cosmetology and Aesthetics Branch of Zhejiang Medical Association, the vice chairman in the first session of Society of Plastic Surgery and Microsurgery of Hangzhou Medical Association, a member of experts for medical malpractice appraisal of Hangzhou Medical Association, a member of the standing committee in the first session of Hand Surgery Branch of Zhejiang Medical Association, the vice chairman in the first session of limb function reconstruction specialized committee of Zhejiang Rehabilitation Medical Association, a member of special editorial board in the seventh and eighth session of *Chinese Journal of Microsurgery*, a member of communication editorial board in the ninth session of *Chinese Journal of Microsurgery*, and the vice chairman in the first session of Microsurgery Branch of Zhejiang Medical Association.

He has published more than 50 academic papers, including 14 SCI papers and 23 papers in Chinese core journals, and obtained a national utility model patent. Besides, he has undertaken and completed 11 provincial and municipal research projects, which achieved advanced levels domestically and abroad, respectively. In 1995, he won the third prize of Zhejiang Science and Technology Progress Award. In 1997, he won the third prize of scientific and technological achievements of the Ministry of Health and the first prize of Hangzhou Science and Technology Progress Award. He is the chief editor of *Atlas of Clinical Surgery for Hand-foot Wound Flap Repair* and *Congenital Deformities of Hand and Upper Limb* in Chinese and English versions. And he was the deputy editor of many academic monographs, *Errors and Complications Management in Plastic Surgery* for example. In 1997, he studied at Beckman Laser Institute & Medical Clinic in the University of California. And in 2007, he visited for communication at Luisenhospital Aachen in Germany. In 1997, he was listed as the third-level training candidate of the trans-century scientific and technological talents in Hangzhou.



Jing-hong Xu is medical doctor of plastic surgery, chief surgeon, and doctoral supervisor of Zhejiang University. He is a student of *Wang Wei*, who is a famous plastic and cosmetic professor in China. And he is in charge of the plastic surgery degree program in the Medical College of Zhejiang University and the director of plastic surgery in the First Affiliated Hospital of Medical College of Zhejiang University as well. Besides, he is a member of plastic and aesthetic surgeon branch of Chinese Medical Doctor Association, the vice chairman of plastic surgery branch of Zhejiang Medical Association, a member of experts for medical malpractice appraisal of Zhejiang Medical Association, and a member of microsurgery branch of Zhejiang Medical Association.

Being engaged in aesthetic plastic surgery career for 27 years and participated in more than 20,000 plastic and cosmetic operations, he has obtained a national invention patent and directed three national research projects and three provincial research projects. Also, he has published 36 SCI papers and guided 32 doctoral students and postgraduates so far.

Part I

Classification and Operation of Cleft Lip and Palate



Classification of Cleft Lip and Palate

1

Yi-jia Yu and Jian-min Yao

1.1 Classification of Cleft Lip

Cleft lip can be classified into three groups according to the fissure site: unilateral cleft lip, bilateral cleft lip, and median cleft lip [1].

1.1.1 Unilateral Cleft Lip

Unilateral cleft lip can be classified into three levels: minimal cleft lip, unilateral incomplete cleft lip, and unilateral complete cleft lip.

1.1.1.1 Minimal Cleft Lip (First-Degree Cleft Lip)

The split is limited in red lip, with or without orbicularis oris disruption (Fig. 1.1).

1.1.1.2 Unilateral Incomplete Cleft Lip (Second-Degree Cleft Lip)

The upper lip is partially split, and the nasal base is intact. It can be divided into unilateral shallow second-degree cleft lip (the cleft is less than half of the lip height, Fig. 1.2) and unilateral deep second-degree cleft lip (the cleft is more than half of the lip height, Fig. 1.3).

1.1.1.3 Unilateral Complete Cleft Lip (Third-Degree Cleft Lip)

The split is completely from the upper lip to the nasal base (Fig. 1.4).

1.1.2 Bilateral Cleft Lip

Bilateral cleft lip is classified into three groups according to whether the anterior jaw is protruding.

1.1.2.1 Type One Bilateral Cleft Lip

The anterior jaw is not protruding. Both sides are first-degree cleft lip or second-degree cleft lip (Fig. 1.5).

1.1.2.2 Type Two Bilateral Cleft Lip

The anterior jaw of one side is protruding, with third-degree cleft lip. The other side is first-degree cleft lip or second-degree cleft lip (Fig. 1.6).

1.1.2.3 Type Three Bilateral Cleft Lip

Bilateral anterior jaw protruding, with third-degree cleft lip (Fig. 1.7).

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Fig. 1.1 Minimal cleft lip (first-degree cleft lip). (a) split of red lip; (b) (c) split of red lip with orbicularis oris disruption; D–G crack and gap of red lip