

Rethinking Rhinoplasty and Facial Surgery

Howard D. Stupak

Rethinking Rhinoplasty and Facial Surgery

A Structural Anatomic Re-Analysis
of the Face and Nose and Their Role
in Aesthetics, Airway, and Sleep



Springer

Howard D. Stupak
Otolaryngology/Head and Neck Surgery
Albert Einstein College of Medicine
Bronx, NY
USA

ISBN 978-3-030-44673-4 ISBN 978-3-030-44674-1 (eBook)
<https://doi.org/10.1007/978-3-030-44674-1>

© Springer Nature Switzerland AG 2020

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

This book is dedicated to my mentor and fellowship director, Calvin M. Johnson, Jr., who helped foster the career of many prominent surgeons in our field. While he may or may not agree with many of the concepts in this book, without the framework of structural/anatomic understanding, surgical and diagnostic skills, and approach to patients that he taught me, I would hardly have even been able to “rethink” anything. I am deeply indebted to his generosity in sharing his thoughts so openly.

I am also extremely grateful to the many other teachers and mentors who have helped shape my career and thoughts – especially to my public school teachers in the Caldwell school system for their patience in developing a late-bloomer, in particular gym teacher and coach Ed Gibbons, who encouraged competitiveness in sports and self-confidence. I thank my professors at Emory University and the Albert Einstein College of Medicine for a fun, wonderful, and broad education and for the introduction to many aspects of biology and medicine. I warmly thank my mentors from

Otolaryngology/Head and Neck Surgery residency at the University of California, San Francisco, especially Andrew Murr, Andrew Goldberg, and David Eisele, for making sure I became a competent and professional physician. I thank Marc Singer and Corey Maas for introducing me to the world of surgical innovation and to Facial Plastic and Reconstructive Surgery.

I would like to thank Marvin Fried, John Bent, Richard Smith, and the faculty and residents of the Otolaryngology Department at Montefiore/Einstein where I am very fortunate to be part of for permitting me to teach and practice with my own style. I also thank my colleagues at Jacobi Medical Center for such great support, from the chair of Surgery, John McNelis, to my fellow surgeons and patients, from whom I have learned so much over the years and for their tremendous effort in the Covid crisis. I also cannot overstate how happy I have been to work with the Jacobi Otolaryngology physician assistants, residents and staff over the years, who have always been so supportive: Nicole Santopietro, Katrina Falkovitch, Diana Kariyev, and Dila Kilaja. I thank Alan Cohen and Joanne Salerno and all of my patients for their tremendous and long-running support of my private practice in Westport.

Of course, I must thank my parents, Susan and Elliot, and brothers, Daniel and Jeffrey, for fostering an amazing family environment of creativity and fun and lifelong learning. Most importantly, this book is for Allison, Grant, Asher, and Harper – you are my true inspiration and love!

Preface/Summary

Disciplines involving the understanding of structure, like rhinoplasty, facial surgery, and otolaryngology, have achieved great strides by incorporating statistical evidence-based medicine in the twentieth century, moving from an anecdotal art form to a science-based series of algorithms. Despite these advances, a focus on specific therapeutic “maneuvers” and whether these tactics result in improvement has resulted in a general disregard for the probing into the structural origins of the physical causation of disorders. With an inquiry into the origins of these causative forces, disorders can be reversed or prevented much more efficiently and naturally than the statistically driven accumulated maneuvers that fuel our treatment algorithms.

Communication and education about topics like rhinoplasty today are largely dispensed by an oligarchy of the conventional, who, in the interest of standardization, control our academies with very fixed educational and research messaging. This is generally the reason why techniques, current knowledge, and results in this field have been largely frozen in time since the late twentieth century supported by mostly uninteresting confirmatory data.

In this environment, only few are willing to challenge the rigid standards, facing an uphill battle with substantial review board, hospital/institutional, legal, and publication obstacles.

With a little bit of reconsideration, one can see how wonderfully simple the external nose is and how it interacts with the underlying facial skeleton and soft tissue. Even more simply, surgical treatments can directly address the root cause of the problem, and not simply consist of a series of steps that fix only downstream manifestations of the problem.

This book is literally the opposite of the standard *comprehensive* rhinoplasty or facial surgery text, perhaps serving as a complement to these books. It questions everything we do and accepts nothing as granted. The stepwise tactic-style surgery that consists of additive (e.g., grafts or sutures) or subtractive (e.g., cartilage removal or scoring/turbinate reduction) that is the norm in surgery is the result of overly linear thinking. A multidimensional view of these problems, fostered by understanding the root cause of nasal and facial structural deficiencies, can help us design

better plans, more focused on logic-based framework adjustments in three-dimensional space, which have the potential to create more efficient, aesthetic, and realistic results. This book is meant to actually be read in order, unlike most texts, and is designed to be engaging, not all-encompassing, with each chapter building on the next. It focuses on basic cause and effect using logic and reason, illustrated with the simplest diagrams designed to illustrate specific concepts, one at a time, like “chalk-talk.” This is in contrast to the more technical, professionally illustrated guides that focus on optimizing maneuver-based surgery via photos or diagrams of graft or suture placement.

Here, the reader is not forced to swallow the rigid algorithms hoisted upon them by the experts, but is encouraged to reach their own deeper conclusions about the nature of facial and airway problems.

Bronx, NY, USA

Howard D. Stupak

Acknowledgement/Conflict of Interest Statement

This book is not intended to serve as a guide to the steps of surgical procedures and does not give specific medical advice for any disorder. Instead, this book is intended to help individuals reason in a more logical fashion than the conventionally accepted wisdom about anatomy and function of the human facial skeleton and airway. Many of the concepts in this book are just that – concepts. Many of these concepts will stand the test of time, and others will require further evolution. I personally use these concepts in their current form in my practice to assist in medical decisions, but many of these would be considered off-label treatments if devices were involved and can differ from the current “standard of care.” I always recommend clearly understanding and explaining the “standard-of-care” treatments to patients before even discussing “off-label” alternatives to ensure maximal transparency. Finally, I do have a conflict of interest in owning intellectual property related to a nasal valve device discussed in Chap. 6, the Alar™ device, licensed to Medtronic ENT. The discussion of this device was purposely limited in this manuscript. I attempt to briefly discuss it as objectively as possible. But, of course, this does not remove all traces of bias, so use caution when interpreting this perspective. I also have applied for intellectual property related to mandible fracture repair devices, including a variation on the vertical plate described in Chap. 10, but this has not been commercialized.

Contents

Part I Toward an Understanding of Structure/Function Interaction

1	The Problem We Face: The “Compartmentalized” Conventional View of Facial/Nasal Anatomy	3
2	The Invisible Forces in Our Nasal Airway: Air Flow and Cavity Negative Pressure	13
3	Nasal Function and Sleep Disorders	37
4	The Human Facial Skeleton: Influence on the Airway and Aesthetics? An Analysis of Cause/Effect Paradigms	57

Part II Rhinoplasty Strategy and Tactics

5	A Structural Model to Systematically Understand Nasal Framework: The Rhinoplasty Compass™	83
6	Modeling to Evaluate Conventional Procedures	123
7	Rhinoplasty Strategy and Tactics Using the Rhinoplasty Compass™	145
8	Complementary Procedures to the Framework Strategy (The Canopy Layer)	183
9	Strategies for Addressing Mouth-Breathing Treatment with an “Adequate” Nose	193

10 Breaking the Barriers Between Specialties: Toward a Universal Understanding of Anatomy and Function 209

Appendix: Notes on Severity of the Upper Respiratory Infection in the Covid-19 Era (Interplay of Ambient Humidity and Mouth-Breathing)..... 229

References 232

Index..... 233