# Facial Plastic and Reconstructive Surgery

A Comprehensive Study Guide

Brian J.-F. Wong Michelle G. Arnold Jacob O. Boeckmann *Editors* 



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A Comprehensive Study Guide

Illustrated by Bryan Lemieux and Aaron Lemieux



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### Introduction

This review book was undertaken as a project designed to address a need in the specialty of Facial Plastic and Reconstructive Surgery. There are many wonderful textbooks available in print and hard copy that are exhaustive and detailed on all aspects of this specialty. However, as a resource for review and a guide for study, we found no comprehensive text. In North America and now globally, certifying board examinations in the specialty of Facial Plastic and Reconstructive Surgery are gaining broad acceptance as a metric of certification, professional excellence, and achievement. Hence, an aim of this book is to aid those who wish to pursue these standardized examinations.

Admittedly, part of our motivation was selfish. Each of us will have to take Maintenance of Certification Examinations in the near future, and we recognized a need for a concise study guidebook for Facial Plastic and Reconstructive Surgery. A study guide is softcover and something that lives in your backpack. It is designed to be annotated with notes and scribbled on. It needs to be light and easily carried. And there is something ethereal about paper that remains transcendent at least for the current rising generation of Facial Plastic Surgeons. Otolaryngology-Head and Neck Surgery has such guides with K.J. Lee's Essential Otolaryngology or Reza Pasha's Clinical Reference Guide serving as excellent examples. Hence, we felt there was a need and thus addressed it. Our approach toward developing this review book and study guide is rather novel, and we took our inspiration from "crowdsourcing" and reached out to others for content. Naturally, we focused on those who had a vested interest in producing a practical review book, the actually examinees. For the most part, with this first edition, we identified fellows in training, who would soon take a board certification examination in Facial Plastic and Reconstructive Surgery, and asked them to write the chapters. These are individuals who, at this point in their careers, are focused and most directed at understanding the subtlety as well as esoterica that permeates this field. We feel this multitude of voices and perspectives, though it does lend to some variability in content and organization, provides a richer, more constructive and informed read.

This is the first edition, and with the support of our managing editors at Springer, the first of what we hope to be many yearly revisions. As such, each chapter was written de novo, and each author had a unique view with respect to identifying, structuring, and presenting material pertinent for the advanced reader. This was not designed as a textbook or introductory volume for beginners. Significant base knowledge and understanding is critical and important. This book was conceived as concise resource that would allow someone to review quickly relevant information in this specialty.

Each year, we will recruit a new set of authors, who will edit and revise each and every chapter. Over time, this iterative approach hopefully will result in an exhaustive and succinct survey of the specialty, and evolve into the ideal preparatory text for the various board examinations in North America and abroad. While we feel it will take one or two more iterations before this edition hits its stride, we believe we have a solid foundation. To that end, in this inaugural edition, we are very fortunate to have as contributing authors three AAFPRS Anderson Prize winners, and their chapters are elegantly written, concise, and to the point.

This project has been our labor of love and the product of thousands of emails, innumerable late night phone calls, and brainstorming sessions. We also worked closely with two artists who illustrated this book and generated over 90 % of the original artwork contained herein. Brian and Aaron Lemieux are identical twin brothers, and in addition to being first-rate medical illustrators, they also happen to be brilliant medical students. We feel this is yet another reason why our book stands apart.

We believe this review book to be living body of work, as each year it will be updated and reviewed by a new set of 15–20 surgeons pursuing advanced training in Facial Plastic and Reconstructive Surgery. We are grateful and appreciative of the efforts of Daniel Dominguez and Rebecca Amos at Springer, who have shepherded us through this process and provided guidance along every step of the way.

Lastly, we dedicate this book to our spouses and our mentors.

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Part I

Basic Principles, Perioperative Management, and Miscellaneous Topics

## **Analgesia and Conscious Sedation**

Christian P. Conderman

### **Sedation and Analgesia**

- Sedation is a Continuum of states from minimal sedation (anxiolysis) to general anesthesia; depth of sedation can be fluid and a patient's clinical status can quickly go from a state of lighter to deeper sedation and vice versa; sedative-analgesics can be given in combination with local and regional anesthesia for greater effect and a reduction in the overall amount of sedative-analgesic medication that may be necessary.
- **Purpose**: (1) allows patients to tolerate unpleasant procedures by relieving anxiety, discomfort, or pain (2) may expedite conduct of procedures in children and uncooperative adults that are not particularly uncomfortable, but that require the patient not to move.
- Sedation can never compensate for an inadequate local anesthetic block; if the regional or local block is deemed inadequate it should be repeated prior to administration of further sedative-analgesic medication.
- Sedation practices may result in cardiac or respiratory depression resulting in hypoxemia

C.P. Conderman, M.D. (🖂)

and must be appropriately recognized and treated to avoid the risk of hypoxic brain injury, cardiac arrest, and/or death.

- Primary causes of morbidity associated with sedation-analgesia are drug-induced respiratory depression and airway obstruction.
- Sedatives and analgesics tend to **impair** airway reflexes in proportion to the degree of sedation-analgesia achieved.
- Practitioners must be able to "rescue" patient from a deeper state of sedation than anticipated, i.e., for moderate sedation may include managing a compromised airway or hypoventilation and for deep sedation may include need to manage respiratory or cardiovascular instability with appropriate medications or interventions.
- Four variables are used to define the level of sedation: (1) level of responsiveness, (2) airway function, (3) spontaneous ventilation, and (4) cardiovascular function (Fig. 1.1).
- Reflexive withdrawal from stimulus is **not a purposeful response** and indicates a state of **deep sedation or general anesthesia.**

**Minimal Sedation**—drug-induced state facilitating performance of a procedure that maintains normal responsiveness and doesn't impair airway, ventilation, or cardiovascular function. Cognition and coordination may be impaired. For example, single oral sedative or analgesic or application of <50 % nitrous oxide with no other sedative or analgesic.

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