

## Preface

Skull base surgery is a new specialty that has developed in the last two decades. The cooperation of different surgical teams, the introduction of new imaging modalities, and the development of interventional radiology have paved the way to this evolving specialty. William House was the pioneer of neurotology and was the first to establish and implement the transtemporal approaches to the cerebellopontine angle. Ugo Fisch was the father of lateral skull base surgery. He systematized the infratemporal fossa approaches and successfully managed the two major impediments in this area, namely, the facial nerve and the intrapetrous internal carotid artery. The combination of the two schools represents the third generation of skull base surgery, which fully addresses not only intradural cerebellopontine angle or extradural infratemporal lesions but also manages extensive lesions that have intradural, cranial, and extracranial extensions. This third-generation surgery has allowed the resection of what were previously considered inoperable tumors.

This book is a surgical atlas that provides a step-by-step demonstration of the major lateral skull base approaches based on our 20 years' experience in the Gruppo Otologico, Piacenza, Italy. The major problem in performing skull base surgery has always been the complex anatomy and the crowding of major neurovascular structures in a deep and relatively inaccessible location. A comprehensive knowledge of the three-dimensional anatomy is therefore of paramount importance for this kind of surgery. Standard anatomy textbooks fail to address this issue. An actual demonstration of the anatomy seen during the different surgical approaches is presented in this book. This is followed by step-by-step descriptions of the surgical technique for each approach and by clinical cases that represent the most commonly encountered lesions so that the surgeon receives a comprehensive understanding of how to perform the approach and what to expect during surgery. "Pearls and pitfalls" are practical tips gathered from the vast number of cases managed throughout the years and are included to help others to avoid mistakes. Schematic computer graphics are an important complementary aid in simplifying an already complex field.

In addition to the description of surgical approaches, introductory chapters on the general principles, instrumentation, and special considerations that characterize this type of surgery are presented. The radiology of skull base lesions is discussed as it relates to surgery, with particular emphasis on findings that can influence the choice of the surgical approach, alter the course of surgery, or affect the prognosis.

Whereas the lateral approaches manage to access the majority of skull base lesions, certain extensive tumors represent particular challenges. For such cases, combined approaches provide the necessary route and these are addressed in detail in Chapter 12. Our management strategy for different skull base lesions is discussed in Chapter 13 on decision making. Issues such as surgical versus nonsurgical

management, the different factors that determine the choice of the surgical approach, and the cases that are managed conservatively or with radiosurgery are all presented in this chapter. It represents our philosophy for getting the best outcome based on years of experience with these difficult pathologies. Chapter 15 addresses the management of the internal carotid artery in skull base surgery. The role of the interventional radiologist in this issue does not need to be emphasized. The use of a stent to facilitate tumor dissection from the artery is a new technique that might have an important role in the future for the management of certain cases.

I would like to thank the co-authors of this book, Dr. Essam Saleh, Dr. Tarek Khrais, Dr. Fernando Mancini, Dr. Alessandra Russo, and Dr. AbdelKader Taibah, for their sincere efforts and dedication to making this work come true. Dr. Saleh had a two-year fellowship in our center in 1993–1994. During this period he was the co-author of the first edition of this book, which dealt only with the surgical anatomy of the lateral skull base approaches. It was not until 1999 that the project for the second edition was started. Dr. Saleh, during a visit to our center, collected the necessary material for the initial start. Thousands of hours passed in writing, rewriting, corrections, revisions, and additions of new cases until the work was accomplished. Special thanks go to Dr. Tarek Khrais, who has been greatly involved not only in processing the clinical material but also in the final preparation, coordination, and editing of this book. Fernando Mancini has been an active participant both in terms of editing and in preparing the computer-generated images that add so much to this work. Alessandra Russo and AbdelKader Taibah have worked for years in my team. They are an indispensable aid during surgery and in the preoperative and postoperative care of the patient. Drs. Paolo Piazza and Roberto Menozzi are the neuroradiologists who collaborate with our team. Their continuous support in preoperative evaluation has enabled us to manage such difficult lesions. Their contributions to the chapters on the radiology and the management of the internal carotid artery are noteworthy.

My thanks also extend to the contributors of this book who have helped greatly in the preparation of its material. Many others have also helped in one way or another in the making of this book. In particular, I would like to mention Drs. Miguel Aristegui and Maurizio Falcioni for their contributions in some of the dissections included in this book.

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