Endovascular Neurosurgery Through Clinical Cases

Aristotelis P. Mitsos

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Springer

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Foreword

Case reports have been dropped by many medical journals because of their negative effect on the all-important impact factor. This sad reality is due to the short time period during which an article's citation counts towards an impact factor score. Interesting cases are generally reported because they illustrate rare conditions or features with relevance far longer than papers describing the latest tools or techniques. In time they may be cited as often or more often than such papers but outside the accounted 2 years after publication, used for comparative journal statistics.

This book proves the value of case reports for the trainee and for the interested senior. I am very proud to have been asked to write a short foreword by my former student. Aristotelis Mitsos completed a master's degree in Interventional Neuroradiology at Oxford in 2006. One of the elements examined for the award of the degree is a logbook detailing cases the student saw during their year of study. He has developed this process, and the thought and care used to collect and document the cases in this book testifies to his diligence.

The cases give readers an opportunity to sample another doctor's practice and provide a focus for reflection on their own. Each case highlights the challenges we face in the hospital every day. They are presented in a succinct manner and feature the details important in endovascular neurosurgery. Thank you Aristotelis for taking the time to document your experience and to share it so honestly.

Oxford, UK — James V. Byrne, MD, FRCS, FRCR

Preface

Endovascular Neurosurgery or Interventional Neuroradiology are two different terms describing the same therapeutic practice in the field of vascular lesions of the central nervous system (CNS) i.e. the brain and the spinal cord. It is true that vascular lesions of the CNS, although of benign nature, may have serious or even catastrophic results for the human brain, especially if they are not treated properly in the acute or subacute phases of their clinical presentation. The ability to reach and treating these lesions using the normal endovascular route of the human body under fluoroscopy, and thus avoiding an open craniotomy procedure, has been a real revolution. It represents a step forward for modern medicine, based on the ability to use current technological advancements and simple human ideas in the services of minimal invasive therapies achieving significant clinical results.

I was fascinated when I first saw the embolisation of a ruptured cerebral aneurysm and the subsequent final outcome of this patient. Furthermore, my enthusiasm has been proved by the clinical reality, and nowadays Endovascular Neurosurgery has the leading role in the treatment of vascular brain lesions worldwide. On the contrary, the daily practice of Endovascular Neurosurgery is not as simple as it may seem. It is definitely based on a thorough knowledge of the central nervous system anatomy and pathophysiology, a detailed understanding of the local angiographic architecture represented in a 3D manner, as well as a huge number of important details which play a significant role in the final outcome. It is important to remember that in this practice, the distance between the success and the disaster is only a few millimeters!

In this rapidly and constantly expanding field of Endovascular Neurosurgery, there are not many teachers or senior and experienced operators available in every unit. Furthermore, the gained experience is relatively limited in both the treatment of the presented vascular pathologies and the continuous evolving materials and techniques, as Endovascular Neurosurgery counts less than two decades of clinical practice. I still remember some of the pioneers of this field, lucky enough to meet and being taught by them, describing that they used to communicate each other (they were less than 15 worldwide) and gather at homes or small country cottages just to exchange their experiences and difficulties and to learn by their own mistakes, asking how *you* could do it if you were in my position? Of course, all these are just history nowadays, but the need to learn from each other is still vital in our meetings and congresses. This concept returned to my mind when, after

completing my 2-year neurovascular fellowship, I returned back home to organize and run a neurovascular unit completely from the scratch. I wished then, I had the chance to ask another neurovascular colleague for his personal opinion on a case, a treatment plan or a complication. Unfortunately, beside the existence of quite experienced neurosurgeons in our team, no other neuroendovascular member was available and no second opinion or idea could be expressed during my neurovascular practice. At all these moments, the appropriate support has been derived either from personal communications or by journal articles or books and their contribution was of paramount importance.

This book has been written based exactly on these thoughts. The theoretical aspects of Endovascular Neurosurgery are already well written by more experienced practitioners and most of the basic techniques can be learned through hands-on experience gained in the angioroom during daily practice. The difficulties and dilemmas appear in searching how to use the available endovascular tools properly, in which cases, under which indications and targets, how to avoid and minimize risks and how to handle the unavoidable complications. The carefully selected presentations included in this book, organized in ten different chapters covering most aspects of endovascular neurosurgery are aimed towards these targets, intended to navigate the reader through practical case-based knowledge contributing to a better understanding of the nature of the CNS vascular lesions and enhance his/her ability to safer and more successful neuroendovascular procedures. The readers who may find this book useful vary from neurosurgeons, neurologists and neuroradiologists in training, neurovascular fellows to more senior practitioners, who would like to compare their personal practice or read the points that are of interest and the sources of difficulties and complications for their neurovascular staff or trainees.

Athens, Greece Aristotelis P. Mitsos, MD, MSc, PhD

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All the patients described in this book have been treated in the Neurovascular Unit of the Department of Neurosurgery in the 401 Athens General Army Hospital by the author himself. Thus, this work and its results are a reflection of the co-operation of the medical, nursing and technologic staff of the Neuroradiology Unit, the ICU and the Departments of Neurosurgery and Anesthesiology. Without their continuous efforts and support, the neuroendovascular service in this hospital could not have reached the quality level it currently offers.

The book is dedicated to my parents for their support throughout my life, to my wonderful wife Maria for her continuous support and to my children, Panos and Rania, who offer me generously the appropriate encouragement to overcome everyday difficulties and move on forward. Last but not least, I would like to thank Andrea Ridolfi of Springer-Verlag for his co-operation and patience in the editorial support throughout this project.

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