

Abhishek Agrawal
Gavin Britz *Editors*

Pediatric Vascular Neurosurgery

Principles
and Practice of
Neurovascular
Disorders (Part 1)

 Springer

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Foreword

Pediatric Vascular Neurosurgery is a valuable contribution to the medical literature. This two-volume overview on pediatric vascular neurosurgery, edited by Drs. Agrawal and Britz, provides timely, superb, and wide-ranging information. The authors, selected by the editor, are well-recognized experts who provide insightful and comprehensive information. Each chapter contains multiple pertinent illustrations that greatly enrich the text.



Volume I is titled *Pediatric Vascular Neurosurgery: Principles and Practice of Neurovascular Disorders (Part 1)*. The initial chapters of this volume provide an overview on the fundamental background of pediatric neurovascular disorders, whereas subsequent chapters review in detail specific vascular entities.

Volume II focuses on the technical nuances in contemporary vascular neurosurgery. Like Volume I, the initial chapters deal with basic information such as the embryology of the cerebral circulation and in uterine vascular disorders. The remaining chapters then comprehensively cover the treatment options of individual vascular entities and uniquely focus on technical advances and approaches.

I congratulate the editors and the contributing authors for this definitive and comprehensive book. I am confident that medical students and residents will find these volumes a valuable source of information and that pediatric neurologists, pediatric neurosurgeons, and vascular neurosurgeons will want to add *Pediatric Vascular Neurosurgery* to their library.

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Foreword

“A vicious bag of bleeding worms” was how a vein of Galen aneurysm was described to me during my training. The fact that the paediatric neurosurgeon now rarely has to lose sleep over the thought that they would have to tackle such a beast is a measure of how far the practice of paediatric vascular neurosurgery has come in the last 25 years. A glance at the table of contents of these volumes shows how the subject has developed and matured in that time. It has become commonplace to explain how much a medical discipline has changed over the years and neurosurgical practice as a whole has changed dramatically since I began my training in the late 1980s. There can be little doubt that the discipline of paediatric vascular neurosurgery is one branch of our practice which has been transformed beyond recognition. Advances in imaging technology, stereotactic radiosurgery, endovascular treatment and progress in operative neurosurgical techniques are some of the ways in which the subject has developed. It is therefore timely that Drs. Britz and Agrawal have brought together experts in the field to produce these volumes which will serve as the definitive reference for the subject for many years to come.



The foreword to such a textbook is generally written by an emeritus professor or other worthy who has made a major contribution to the subject at hand. I can lay claim to neither of these accolades, and so I am flattered to be asked to make this contribution. Children with vascular pathology, although not presenting a large numerical burden on most neurosurgical practice, can and do represent a significant emotional drain both to their families and their treating physicians. By its very nature, vascular pathology often presents in a dramatic fashion with potentially devastating consequences for young patients and their families. The need to have a sure grounding in the diagnosis and management of these varied conditions is paramount. An understanding of the pathophysiology, the natural history and treatment options is essential if an appropriate management plan is to be formulated and put into practice. Profound knowledge and great technical skill, however, are insufficient alone in the management of these conditions. There can be few other fields of neurosurgical practice, let alone medicine as a whole, where the relationship between the patient, their family and the neurosurgeon is so important. In such a technically demanding specialty, it is essential not to lose sight of the human side and that the wellbeing of the child remains at the centre of everything we do.

A close relationship between the neurosurgical units of Seattle, Washington, and the Atkinson Morley Hospital, UK, developed from the late 1980s onwards, and it was as part of this programme that I first met Dr. Britz. This trans-Atlantic collaboration produced a prolific exchange of ideas and continues to this day with Dr. Britz's unit in Houston. It is perhaps no coincidence that the field of paediatric vascular neurosurgery is one in which the sharing of methods and technology is conspicuous and which has led to the advances seen in recent years and described in this book. The importance of the involvement of all related disciplines in the management of such complex cases cannot be overstated. The paediatric neurosurgeon therefore plays a pivotal role in bringing all this together, and he or she must ensure that the related disciplines work as a team. "Multidisciplinary team working" has become something of a mantra over the last decade and is perhaps used too freely without much thought as to what it should really mean, but there are few better examples than in the field of paediatric vascular neurosurgery where this applies. The importance of the role of the paediatric vascular neurosurgeon is in bringing an overarching view of all the disciplines involved to the management of these conditions. A clear grasp of the range and scope of the subject is therefore essential. This book completes that view.

October 2016

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Preface

There are numerous hospitals with dedicated neurosurgery services catering to thousands of children. However, only a handful of dedicated pediatric vascular textbooks are available as comprehensive guides for review. This book is part of a two-volume series which provides an overview on the fundamental background of pediatric neurovascular disorders.

Pediatric Vascular Neurosurgery: Principles and Practice of Neurovascular Disorders (Part I) updates the readers on basic pediatric vascular anatomy and most commonly encountered neurovascular diseases including – but not limited to – vein of Galen aneurysmal malformations (VGAMs), developmental venous anomalies (DVAs), pediatric stroke, and Moya-Moya diseases. Topics such as intra-arterial delivery of chemotherapeutic agents and stereotactic radiosurgery in pediatric neurovascular diseases have also been discussed at length by experts in the field.

Volume II focuses on the technical nuances in contemporary vascular neurosurgery. It delves into different kinds of complex conditions like craniofacial arteriovenous metamerism syndrome (CAMS), spinal arteriovenous metamerism syndrome (SAMS), non-Galenic fistulas, and in utero fetal imaging using non-invasive modalities like ultrasound and MRI.

This two-volume set also aims to replace “excessive information” obtained on the Internet about a neurosurgical disease, which may be too overwhelming, improperly written, not updated, or may be misinterpreted, misunderstood, or irrelevant. The series is specially compiled and illustrated for medical students, residents, fellows, or faculty in pediatric-related specialties, including but not limited to neurosurgery, neurology, pediatrics, intensivists, radiology, or anesthesia involved in pediatric care, to get a quick glimpse of pediatric neurosurgical conditions encountered on a day-to-day basis.

Part I: *Pediatric Vascular Neurosurgery: Principles and Practice of Neurovascular Disorders.*

Part II: *Technical Nuances in Contemporary Vascular Neurosurgery.*

Houston, TX, USA

Abhishek Agrawal
Gavin Britz

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Behind all this are the unconditional support, motivation, and encouragement from our family members, parents, and children who have always been a source of strength and inspiration.



Abhishek Agrawal, M.D.



Gavin Britz, M.D.

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