

About the Author



Vrushali C. Ponde is a proactive anesthesiologist who enjoys her work. Her areas of interest are ultrasound guided regional anesthesia in children and adults, pediatric anesthesia, management of acute and chronic pain in children. To learn and teach regional anesthesia is her passion which is reflected in her work as a founder secretary and managing trustee of Academy of Regional Anesthesia, India, she is also a committee member of Asian Society of pediatric anesthesia and Ex Hon – Secretary of Asian society of pediatric anesthesia. She is one of the founder director of Children anesthesia services of Mumbai. Numerous national and international articles written by her indicates her enthusiasm for these subjects. She also serves as a reviewer to many national and international journals. In her career she has held responsibilities of organizing many live demonstration workshops on ultrasound guided regional anesthesia and directs a bimonthly simulation based training course for the same every two months in Holy Family hospital and research centre. She has also been an invited faculty in various national and international conferences.

She would love to be contacted on vrushaliponde@yahoo.co.in and would be delighted to have her readers feed backs on this book.

About the Book



The eyes of the most important person to the author, the reader, are reading this information, it better be clear and honest in communicating!

The book is written to walk the reader through the block: "walk through the block" book. Ultrasound guided regional anesthesia, a science in progress, something for all regional anesthesiologist to keep abreast with has to be simplified, steered clear of tedious aspects and brought at the door step of every operation theater. For one sole purpose, "to impart pain relief in intra and postoperative period with safety and efficacy" and make over all anesthesia safe.



The new second edition now covers...

- ♦ The basics of ultrasound physics from an anesthesiologist perspective.
- ♦ Block procedures are described from the basic steps such as ergonomics, placement of the probe, its relationship with the needle, respective ultrasound scan and the most acceptable patterns of drug spread. Finally the drug dosages are elaborated.
- ♦ The distinction of this book is its guidelines on techniques and drug dosages for neonates, infants, children as well as adults.
- ♦ The second edition has covered continuous perineural catheters placements; adult spine sonoanatomy and ultrasound guided continuous epidurals in children. New blocks have been described in few chapters e.g. Chapter on lower extremity blocks and abdominal blocks etc. Numerous scans have been replaced and new scans have been added.



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Ponde

An Illustrative Manual of Ultrasound Guided Regional Anesthesia for Children & Adults 2nd Edition

An Illustrative Manual of Ultrasound Guided Regional Anaesthesia for Children & Adults



2nd EDITION

Vrushali C. Ponde

Dedication

I dedicate this book to my patients,
my husband Chandrashekhhar K. Ponde,
my daughters Jui and Jae, and
my parents for their unconditional support.

Foreword



The appearance of this second edition of the Illustrative Manual of Ultrasound Guided Regional Anesthesia by Dr. Vrushali Ponde is like “a dream come true” for a long and eagerly awaited resource text that covers both adult and pediatric regional anesthesia practice. This is quite a unique and extraordinary accomplishment and as this book now shows, such a sense of anticipation has been amply justified.

This Illustrative Manual represents, first and foremost, a brilliant firsthand account of Dr. Ponde’s personal experience and clinical pearls in the management of children and adults undergoing regional anesthesia for surgery and pain treatment. She gives concise yet riveting description of how to perform a peripheral nerve block and a central neuraxial block procedure, step by step. Each chapter begins with a brief account of relevant clinical anatomy and sonoanatomy, patient and probe position, and indications before divulging the technical intricacy and challenges of the ultrasound procedure. This book is full of colored anatomical illustrations that accompany ultrasonographic images giving the readers a full appreciation and understanding of the ultrasound guided intervention described in each chapter.

But this quick reference manual is not simply another ultrasound text on regional anesthesia. It is evidence from start that advanced in-depth preparation and careful organization have been invested in each chapter. Most important of all, the work of Dr. Ponde has fulfilled an unmet educational need of colleagues who practice pediatric regional anesthesia. Truly this book containing the author’s insightful “nugget” and clinically pertinent guidelines on anesthetic techniques and drug dosing will safeguard the welfare of neonates, infants and older children undergoing regional anesthesia. This is the remarkable distinction this book has from other adult regional anesthesia text.

Dr. Ponde’s thoroughness, her passion for teaching regional anesthesia, and her exceptional presentation style are evident in every chapter of this book. Like me, I am sure you will take great pleasure in reading this book and be delightfully rewarded.

Vincent WS Chan, MD, FRCPC

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- Professor, Department of Anesthesia, University of Toronto (2004-present)
- Staff Anesthesiologist, Toronto Western Hospital (1995–present)
- Head, Regional Anesthesia and Pain Program, Department of Anesthesia, University Health Network (2001-present)
- Editor, Canadian Journal of Anesthesia (2000-2006)
- Editor, Regional Anesthesia and Pain Medicine Journal (1999-present)
- Board Member, American Society of Regional Anesthesia and Pain Medicine (1999-present)
- Treasurer, American Society of Regional Anesthesia and Pain Medicine (2005-2007)
- Member, Committee on Regional Anesthesia, American Society of Anesthesiologists (2003-present)
- Faculty of 1000 Medicine (2003-present)
- Member, Global Perioperative Research Organization, International Anesthesia Research Society (2001-present)
- Vice Chair, Regional Anesthesia Section, Canadian Anesthesiologists’ Society (1998-2003)
- Co-Chair, Annual Regional Anesthesia and Pain Medicine Conference, Continuing Medical Education, University of Toronto (1996–present)

Preface

To write a book is like giving shape to your thoughts and experiences and bind them in print for once. To revisit your own writing is like pointing out your own errors and impatience to yourself and get your ego dampened by them, a great advantage! To write a second edition is asking perfection from your own self which is far from reality. Trust me it requires courage because you have a serious chance for the world to read your imperfection because it is in print again! Not- withstanding this real possibility, All the same I have a job to do.

General anaesthesia has a remarkable feature, it never fails. The down side of regional anaesthesia is its possibility of failure. More often than not! This is the biggest hurdle with this fantastic subject. In today's times regional anaesthesia can be systematically approached, learnt and mastered. This is essentially so because we can see the nerves to be blocked with ultrasound.

This is the greatest leap in the science of regional anaesthesia in recent times. This book is written with all those in mind who want to keep abreast with ultrasound guided regional anaesthesia in children as well as adults. The science of Ultrasound Guided Regional Anaesthesia (USGRA) has established itself, is here to stay and is not at all a passing fad. Definitely with a modality which is fast becoming a standard of care we do not seem to have much choice but to hone our skills here.

More importantly, to learn, teach and research this subject is one purpose I have in my life, because I have witnessed my patients, from new born to very ailing and old getting benefit from this subject and am convinced with its current use and future potential.

Although USGRA has evolved almost to its pinnacle and rampantly written about on the internet, in our country a systematic teaching on this subject is just shaping up. The first edition did try to cover up this dearth to some extent which gives me an incentive to write once again. The reviews written on this book in our journals especially the Indian Journal of Anaesthesiology and Journal of Anesthesiology and Clinical Pharmacology were reassuring. The encouragement, comments and constructive criticism from readers has inspired this second edition. As a critic to my own previous edition I could have done far well especially in grammar and spellings!

This new edition has covered basic ultrasound physics, Upper extremity blocks, lower extremity blocks, trunk blocks, and central neuroaxis blocks in very small kids as well as adults. The description of continuous perineural catheters placements, adult spine sonoanatomy and ultrasound guided continuous epidurals in neonates infants and children deserve a special mention. Newer blocks have been described in certain chapter's e.g. Chapter on lower extremity blocks and abdominal blocks etc. Numerous scans have been replaced and new scans have been added as over the period of years, my understanding of this science has perhaps grown.

To sum it up, this book is written for practising consultant anaesthesiologists eager to embark on USGRA; hopefully they would be guided step by step while they actually perform the procedures in all age groups. It also intends to give additional ideas to a person who is already practising these techniques and certainly the students. I firmly believe that the young impressionable and unconditioned minds of our students will be able to grasp this subject and they indeed would be our future legacy.

Vrushali C. Ponde

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Acknowledgement

“There is no limit to the amount of good a man can do, as long as he does not care who takes the credit.” Bolorunduro Awoniyi.

The world luckily has quite a few of them even today! This book has come to life because of such people who silently rendered their helping hand. I can never thank them enough but the least I can do is to acknowledge them in this book. This might appear a lengthy page to read but to understand the making of this book I urges the readers to stay on this page till the end.

Family always plays a big role. It is impossible to do anything constructive without its support. My family consist of my two daughters and husband. My Husband freely offers support to my work and my children put up with my prolong absence at home while I work or remain busy on the computer inspite of being at home. I could write this second edition because of them and not inspite of them!!

I owe a great debt of gratitude to Professor Vincent Chan. His contribution to the science of ultrasound guided regional anaesthesia is enormous. With a staggering more than 100 international articles on this science I wouldn't have asked for more than a forward from him. Being an editor to international journals himself his comments on the books mean a lot me. He remains nonchalant about his accomplishments, is a great and down to earth human being who puts any one to instant comfort. I shall always remain grateful for the time he spent in going through this book and writing a forward for me.

It is very likely for an author to over look once own mistakes and somebody else has to do this job objectively. Dr. Avtar Singh and Dr. Harssor helped me editing this book. Dr. Avtar Singh in fact took care of chapter 3,4,5,6 and 7 when they were raw and not edited even by myself. He patiently went through the chapters and pointed out sentences which weren't making clear sense and made me write them again. I thank him a lot for his efforts and his unflinching eagerness to help. Dr. Harsoor took care of 1 and 2 chapter, It was extremely kind of him to have taken out time for this work. I am thankful to Dr. RJ Mehta for proof reading of this book.

As you go through this book you would see lots of illustration and to make the ultrasound scan look simple, schematic diagrams are drawn. Mr. Dattaram Wadekar, artist working with Bhalani publication did this job without much of complains because I made him correct these sketches often times before giving them a final nod. He always did this with a smiling face. Mr. Bhalani himself has sat with me for hours together to put the figures in order, to arrange them in systematic files and folders, with around more than 400 figures this wasn't an easy job. I would get lost in numbering several times!! Mr. Trivedi and Mr. Surendra worked significantly in formatting this book. I must thank Mr. Bharat M Shah for his quality printing job. Vishal S. mayekar deserves a special thanks for formating the book. These are the people who added fun in the efforts to create this book.

I wish to express a heartfelt thank you to all my anaesthesia friends and seniors form Holy Spirit Hospital and Holy family hospital. They all adjust and accommodate and rendered there unconditional support to develop this modality. All my students in both these institutes add vigour to this subject by their enthusiasm to grasp and learn. It is interesting that in our professional journey, to become what we aim for, we keep evolving as a person which is far more important than the goal itself.

Surgery and anaesthesia is a team effort and none can singularly get that spectacular result which we all strive for. Moreover, regional anaesthesia requires support from the surgical colleagues as well. Thankfully I have always got supporting surgeons with astute minds to understand the advantages offered to the patients by regional anaesthesia in the intra and postoperative period. Dr. Nicholas Antao, (President Bombay Orthopaedic Society, 2008-2009 and Editor Indian Journal of Orthopaedics, 1998-2004), Ashok Johari (President, paediatric Orthopaedic Society of India and Editor of Journal of Pediatric Orthopaedics B), and Dr. Nishat Nanavati (General paediatric surgeon) deserve a special mention.

My one day a week spent in J J Hospital paediatric surgery operation theatre gives me a perfect milieu to introspect, innovate and evolve USGRA in this super speciality. I thank Dr. Bharati Kondwilkar (HOD, Department of Anaesthesia J J Hospital) and Dr. Nitin Dende (HOD, Department of Pediatric Surgery J J Hospital) to accommodate and support me. I also thank Dr. Reena Prampill, (HOD Jagjivanram hospital) and her team who wholeheartedly support this work and research in this field.

Mr. Nirav Mehta, regional manager Sonosite lined up his entire team for help. Mr. Indresh who is a clinical application specialist in Sonosite gave a helping hand in chapter on basic physics and for net search. Mr. Srinath from GE health care did help in machine figures.

I must mention my team of "Children Anaesthesia Services, Mumbai" which consist of Dr. Milan Shah, Dr. Dilip Chavan, Dr. Ankit Desai, Dr. Kiran Patel and Dr. Anuya Gursale who at times cover my calls, adjusted meetings to suit my academic endeavours.

I wish to express a heartfelt thanks to Dr. Lakshmi Vas as she was the one who had conducted the first ultrasound guided workshop in India.

Lastly, a "thanks you" to the countless others that assisted me in finishing this book.

Vrushali C. Ponde

CONTENTS

Foreword	-----	VII
Preface	-----	VIII
Acknowledgement	-----	IX
1. Basic Principles of Ultrasound Physics	-----	1
2. Upper Extremity Blocks	-----	18
Interscalene Brachial Plexus Block	-----	18
Interscalene Catheter Placements Under Ultrasound Guidance	-----	26
Supraclavicular Brachial Plexus Block	-----	30
Infraclavicular Brachial Plexus Block	-----	34
Infraclavicular Catheter Placement Under Ultrasound Guidance	-----	41
Axillary Brachial Plexus Block	-----	43
Forearm Blocks	-----	49
3. Lower Extremity Blocks	-----	57
Sciatic Nerve Block: Infra-Gluteal Approach	-----	58
Sciatic Perineural Catheter Placements	-----	63
Subgluteal Sciatic Nerve Block	-----	65
Popliteal Sciatic Nerve Block	-----	66
Femoral Nerve Block	-----	72
Femoral Perineural Catheter Placement	-----	76
Fascia Iliaca Compartment Block	-----	78
Saphenous Nerve Block	-----	80
Ankle Block	-----	81
4. Trunk Blocks	-----	84
Rectus Sheath Block	-----	85
Ilioinguinal and Iliohypogastric Nerve Block	-----	87
Transversus Abdominal Plane Block	-----	90
Bilateral Subcostal Tap Block	-----	91
5. Central Neuroaxis, Lumbar Plexus & Paravertebral Blocks	-----	93
Caudal Epidural Block	-----	93
Lumbar and Thoracic Epidural Block in Pediatric Patient	-----	101
Adult lumbar Spine Sonoanatomy	-----	104
Thoracic Paravertebral Blocks in Pediatric Patients	-----	108
Lumbar Plexus Block	-----	109
6. Internal Jugular Cannulation in Infants & Neonates	-----	112
Internal Jugular Venous Cannulation	-----	112
7. Artifacts in Ultrasound Images	-----	116
Enhancement Artifact	-----	116
Reverberation Artifact	-----	116
Shadowing Artifact	-----	117
Bayonet Artifact	-----	117
Index	-----	119