Danilo Jankovic
Philip Peng

Regional Nerve Blocks in Anesthesia and Pain Therapy

Traditional and Ultrasound-Guided Techniques

Fourth Edition

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ISBN 978-3-319-05130-7 ISBN 978-3-319-05131-4 (eBook)
DOI 10.1007/978-3-319-05131-4

Library of Congress Control Number: 2015945349

Springer Cham Heidelberg New York Dordrecht London

Printed on acid-free paper

Springer International Publishing AG Switzerland is part of Springer Science+Business Media (www.springer.com)

I dedicate this book to my wife Lydia, and my children Lara and Aleks.
Their love, support, and encouragement have made this book possible.

Danilo Jankovic

This book is dedicated to my wife, Carol, for her continued support,
encouragement and understanding; to my children, Julia and Michael,
who fill me with joy and love; and to my sister, Rita, who keeps
reminding me to be strong and assertive.
Without them, this book would be impossible.

Philip Peng

Preface

In recent years, the field of regional anesthesia, and in particular peripheral and neuraxial nerve blockade, has entered an unprecedented renaissance. This renaissance is due primarily to the widespread introduction of ultrasound-guided regional anesthesia. The ability to visualise the anatomy of interest, the needle-nerve relationship, and the spread of the local anesthetic has resulted in significant growth of interest in the use of peripheral and neuraxial nerve blocks. Although ultrasound guidance eventually may become the most prevalent method of nerve blockade, most procedures world-wide are still performed using the methods of peripheral nerve stimulation and/or surface landmarks, particularly in the developing world. Because this book has been one of the important teaching sources internationally, we decided to retain the section on the traditional techniques of nerve blockade in addition to the new section on ultrasound-guided regional anesthesia.

The book contains precise anatomical drawings, illustrations and self-made native anatomical preparations in full-colour throughout, and also provides detailed instructions on how to apply regional anesthesia. The descriptions of anatomy and sonoanatomy are highly relevant to the regional blocks and the clear illustrations helps to better understanding of each block.

We made every effort that the overall style of presentation is methodical, thorough and precise. The description of each block is broken down into headings: definition; anatomy; indications; contraindications; technique (ultrasound-guided and traditional); drug choice and dosage; side effects; complications (and how to avoid them or treat them) and medicolegal documentation. The information given in a checklist record for each technique helps in proper documentation of the performed nerve blocks. The book focuses on each area of the body, describes its anatomy and sonoanatomy, and then explains the needed supplies for each nerve block and the details of how to do it.

This book is practically oriented; the book could almost be taken to the operating room and used as a guide. Topics are consistently organized, very detailed and simple to read. This book is intended for practicing anesthesiologists and all specialties engaged in the field of pain therapy (such as pain specialists, general surgeons, orthopaedic surgeons, neurosurgeons, neurologists, and general practitioners).

The book comprises 73 chapters, organized in 12 sections, covering US-guided and traditional nerve blocks in anesthesia and interventional pain management:

Part I reviews the General Considerations (Use of Local Anesthetics in Regional Anesthesia and Pain Management, Basics of Ultrasound Imaging, Use of Nerve Stimulation and Stimulating Catheters in the Ultrasound Era, and Complications of Peripheral and Neuraxial Nerve Blocks).

Part II covers the Head and Neck Region (Regional Anesthesia in Ophthalmology, Facial Nerve Block, Anesthesia of the Airways, Phrenic Nerve Block, Trigeminal Nerve Block (classic and neurodestructive procedures), Occipital Nerves Block, Stellate Ganglion Block, Superior Cervical Ganglion Block, and Deep and Superficial Cervical Plexus Block).

Part III focuses on Blocks in Cervical Region (Cervical Interlaminar Epidural Block, Cervical Facet Nerve Blocks (Medial Branch and Third Occipital Nerve), (Pulsed) Radiofrequency

Treatment Adjacent to the Cervical Dorsal Root Ganglion, and Cervical Percutaneous Facet Denervation).

Part IV reviews the Shoulder Region (Suprascapular Nerve Block, Glenohumeral and Acromioclavicular Joints, Subacromial Subdeltoid Bursa, Long Head of Biceps Tendon, Treatment of Calcific Tendinitis, and Rotator Muscles and Subscapular Nerve Injections).

Part V covers the detailed Blocks of the Upper Extremity (Brachial Plexus and Intravenous Regional Anesthesia).

Part VI reviews region of the Elbow and Wrist.

Part VII focuses on the Thoracic Region (Thoracic Paravertebral Block, Intercostal Nerve Block).

Part VIII reviews Lumbosacral Spine (Neuraxial Blocks, Neuraxial Analgesia in Obstetrics, Caudal Epidural Injections, Lumbar Sympathetic Blocks, Lumbar Facet Joint and Nerve Injection, Lumbar Percutaneous Facet Denervation, Sacroiliac Joint Injection, Sacral Nerve Root Block, Lumbosacral Epiduroscopy, and Percutaneous Epidural Neuroplasty).

Part IX focuses on Abdominal and Pelvic Region (Celiac Plexus Block, Nerve Blocks of the Abdominal Wall, Ilioinguinal, Iliohypogastric and Genitofemoral Nerve Blocks, Injection for Piriformis Syndrome, Pudendal Nerve Block, Superior Hypogastric and Ganglion Impar Block, Paracervical Block).

Part X reviews detailed Lower Extremity Blocks.

Part XI covers Lower Extremity Musculoskeletal Injections (common Joint and Bursa Injections).

Part XII reviews detailed Regional Blocks for Children (Upper and Lower Limb and Trunk and Neuraxial Blocks).

This book owes a great deal to a number of well-recognized clinicians, academicians and regional anesthesia teams from around the globe. Many thanks to numerous international collaborators, who supported this project.

We would like to express our special thanks to colleagues and friends who have contributed to this edition:

Ban C.H. Tsui, Michael Barrington, James Heavner, Vincent Chan, Ki Jinn Chin, Andrew Gray, Andre'van Zundert, Olaf Rohof, Robert Jan Stolker, Stephen Halpern, Jens Kessler, Jan van Zundert, Admir Hadzic, Andreas Siegenthaler, Chin-Wern Chan, Daquan Xu, Peter Cheng, Chandra Kumar, Hariharan Shankar, Jeffrey Ghassemi, Antony Hade, Herman Sehmbi, Anahi Perlas, Gloria Seah, John Hanlon, Faraj Abdallah, Geoff Bellingham, Paul Gray, Sara Cheung, Heather Ting, Dario Bugada, Paul Tumber, Steven Renes, Santine van den Heuvel, Geert-Jan van Geffen, Derek Dillane, Anuj Bhatia, Hemmo Bosscher, Gabor Racz, Miles Day, Battista Borghi and Amit Pawa.

We express our sincere thanks to all Springer editorial staff for their expertise and help in editing this book and their constant support and expert assistance.

Cologne-Hürth, Nordrhein-Westfalen, Germany — Danilo Jankovic
Toronto, ON, Canada — Philip Peng

Contents

Part VIII Lumbosacral Spine