CONTENTS

Chapter 1. **Basics of Ultrasound** **1**

- Parts of the Ultrasound Machine 3
- Different Types of Ultrasound 7
- Selecting an Ultrasound Transducer Probe Based on Frequency, Array and Footprint 9
- Learning to Scan 11
- Artifacts 12
- Ultrasound Terminology 14

Chapter 2. **Ultrasound-guided Central Venous Access** **16**

- Basic Principles 18
- Indications and Contraindications 18
- Equipment Specifications 20
- General Protocol for Central Line Placement 21
- General Consideration for Ultrasound-guided Vascular Access 25
- Ultrasound-guided Vascular Access Line Placement 34
- Technique for Internal Jugular Vein Cannulation 36
- Technique for Subclavian Vein 44
- Technique for Femoral Vein Cannulation 48
- Alternative Central Venous Cannulation Sites 49
- Documentation 51

Chapter 3. **Complications and their Management** **57**

- Complications of Central Venous Access 57
- Infectious Complications of Central Venous Catheterization and their Prevention 58
- Mechanical Complications 60
- Management of Arterial Trauma or Injury due to Central Venous Catheterization 62
- Thrombotic Complications 63

Chapter 4. **Ultrasound-guided Peripheral Venous Access 66**

- Peripheral Venous Access 66
- Technique for Ultrasound-guided Peripheral Venous Access 68

Chapter 5. **Introduction of Ultrasound-guided Regional Block 75**

- History 75
- Local Anesthetic Agents 76
- Regional Anesthesia 78
- Ultrasound-guided Regional Blocks 83

Chapter 6. **Upper Extremity Nerve Blocks 86**

- Brachial Plexus Block 87
- Ultrasound-guided Forearm Block 103

Chapter 7. **Lower Extremity Nerve Blocks 110**

- Ultrasound-guided Femoral Nerve Block 110
- Ultrasound-guided Popliteal Sciatic Nerve Block 113

Chapter 8. **Transversus Abdominis Plane Block 119**

- Anatomy 119
- Indications 121
- The Landmark Technique for TAP Block 122
- Ultrasound-guided TAP Block 122
- Ultrasound Anatomy 122
- Technique of TAP Block 125
- Complications 129

Index *131*