High-Resolution Ultrasonography

for Peripheral Nerve Diagnostics

A Guide for Clinicians Involved in Diagnosis and
Management of Peripheral Nerve Disorders

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Management of Peripheral Nerve Disorders

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Preface

The clinical neurophysiologist is primarily concerned with being able to provide an accurate diagnosis. Defining the location and extent of a lesion is achieved through a detailed clinical examination with judicious application of additional tests of nervous function. The role of nerve conduction studies and the related techniques of EMG evoked potentials in providing further functional information has been well established. Recently, however, technical advances in imaging techniques have enhanced the scope for providing the clinician with much-improved anatomical information regarding disorders of the peripheral nervous system. The technical advances of high resolution ultrasonography (HRU) have been nothing less than spectacular, enabling hugely improved depiction of peripheral nervous structures in a three-dimensional setting. This technique is set to progress rapidly and become an established adjunct of the clinical neurophysiologist. Combination with color Doppler allows integration of additional information on the vascular supply of the peripheral nerves.

However, the main advance brought about by HRU is that it enables accurate localization of peripheral nerve disorders. In addition, it is cheap and readily available, in contradistinction to the costly MRI techniques. A further advantage is that it allows dynamic, real time injections of nerves, which are frequently performed by anesthetists.

In this book we aim primarily to provide hands-on information for clinicians involved in peripheral nerve diagnostics, who are often clinical neurophysiologists. We have thus selected topics for which HRU is of particular help in achieving a diagnosis. We are confident that in the near future HRU will become a valuable if not indispensable companion technique for the clinical neurophysiologist. We hope that this book will help provide the user with a crucial, practical link between the anatomy of the peripheral nerves and the use of HRU in the identification of peripheral nerve disease.

EP Wilder-Smith, K Rajendran & AK Therimadasamy
National University of Singapore, May 2009

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Rajendran Kanagasuntheram graduated from the Faculty of Medicine, National University of Singapore and practiced general surgery before joining the department of Anatomy where he has served for the past 30 years teaching both medical and dental undergraduates as well as postgraduates. His main interest, besides medical education, has been in the development of multimedia material to enhance the teaching and learning of anatomy.

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Contents

<i>Preface</i>	v
<i>Acknowledgements</i>	vii
<i>About the Authors</i>	ix
1. Introduction	1
Technical Considerations of High Resolution Ultrasonography	1
<i>Advantages of HRU</i>	3
Characteristics of Healthy Peripheral Nerves	3
<i>Appearance and identification</i>	3
<i>Measurements</i>	4
Characteristics of Diseased Peripheral Nerves	6
2. Finding the Nerve	9
Antebrachial Nerves	10
<i>Medial antebrachial (L)</i>	10
Brachial plexus (R)	11
Cervical Roots (C5 & 6) (R)	12
Ilioinguinal Nerve (R)	13
Lateral Femoral Cutaneous (R)	14
Median Nerve (Carpal Tunnel) (R)	15
Peroneal Nerve (Fibular Head) (R)	16
Radial Nerve (Spiral Groove) (R)	17
Radial Nerve (Supinator Canal) (L)	18

Sciatic Nerve (Proximal) (L)	19
Superficial Peroneal Nerve (Shin) (L)	20
Superficial Radial Nerve (Forearm) (R)	21
Sural Nerve (Lower Calf) (R)	22
Tibial Nerve (Knee) (L)	23
Tibial Nerve (Tarsal Tunnel) (R)	24
Ulnar Nerve (Elbow) (R)	25
Ulnar Nerve (Wrist) (L)	26
 3. Clinical Applications	 27
Common Entrapment Neuropathies	27
<i>Median neuropathies including carpal tunnel syndrome</i>	27
<i>Ulnar neuropathy at the elbow</i>	32
Less Common Entrapment Neuropathies	33
<i>Radial neuropathy</i>	35
<i>Ulnar nerve at the wrist</i>	36
<i>Peroneal neuropathy</i>	38
<i>Lateral femoral cutaneous nerve</i>	39
<i>Ilioinguinal nerve</i>	41
<i>Morton's neuroma</i>	41
<i>Brachial plexus</i>	42
<i>Tarsal tunnel syndrome</i>	46
Other Conditions	46
<i>Sciatic neuropathy</i>	46
<i>Inflammatory conditions</i>	47
Other Uses	49
Nerve Blood Flow	50
 <i>References</i>	 55
<i>Index</i>	59