

# Foreword

Drs. Runge, Smoker, and Valavanis and their collaborators have done a superb job of distilling the essential aspects of Neuroradiology into a compact textbook. This book has a higher image to text ratio than most I have read, making it the perfect companion for the neuroradiology PACS workstation. It should be required reading for residents prior to a neuroradiology rotation or for neuroradiology fellows before they begin their fellowship. However, it is so complete and image-rich that I plan to flip through the pages before the next time I sit for the Neuroradiology CAQ (Certificate of Additional Qualification exam). It will also be of interest to neurology and neurosurgical trainees and attendings as an excellent review of the MRI and CT studies they encounter every day on their patients.

*Neuroradiology: The Essentials with MR and CT* really covers the subspecialty from soup to nuts, from normal anatomy to disease, from the routine (e.g., stroke and multiple sclerosis) to cases that might only be seen once a year (e.g., glutaric acidemia type 1 and CADASIL). The image quality is excellent and the images are quite representative

of what would normally be encountered in academic or community practice.

The reader will note that there is a modicum of relevant MR physics interleaved with the discussion. This is reminiscent of Dr. Runge's previous MR physics textbooks. Since I believe this is Dr. Runge's sixteenth book, one expected clear, concise explanations of both MR physics and clinical neuroradiology and that's indeed the case.

As noted above, this book should have a place next to the Neuroradiology PACS workstation for ready reference when one "just wants to be sure" or to flesh out the clinical aspects of the imaging findings for discussion with our clinical neuro colleagues. However, I would be sure to bolt this book down because I suspect it will have a high tendency to "walk." I hope you enjoy reading it as much as I did.

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# Preface

*Neuroradiology: The Essentials with MR and CT* is written both to be read from cover to cover and to be used as a quick reference in the midst of a busy clinical day. Designed as a practical educational resource for clinical neuroradiology, the text is divided into three sections: the brain, head and neck, and spine. Care has been taken for the text to be inclusive, yet focused on commonly encountered diseases, and to cover well the breadth of the field without gaps.

The diseases and their imaging presentations that one is likely to encounter in clinical practice, and that are essential to know, are included. The focus is on illustrating

and describing the MR and CT appearances of these, discussing in depth the imaging findings. The text is written from a clinical radiology perspective, drawing on personal experience and covering common imaging findings often not well-described in more traditional, academic textbooks.

The true basis of the text is that of clinical neuroradiology—that is, recognition of characteristic findings on both MR and CT of the disease processes we are likely to encounter in clinical practice, using as a basis excellent images and case material from both modalities.

# Abbreviations

The following abbreviations are used with the figures, to enable rapid recognition of imaging technique and to permit the legends to be more concise.

ADC	apparent diffusion coefficient	FLAIR	fluid attenuated inversion recovery
ASL	arterial spin labeling	GRE	gradient recalled echo, specifically with T2* weighting
CBF	cerebral blood flow	MTT	mean transit time
CBV	cerebral blood volume	PD	proton density weighted
CE CT	contrast-enhanced CT	PET	positron emission tomography
CE MRA	contrast-enhanced magnetic resonance angiography	STIR	short tau inversion recovery
CE T1	contrast-enhanced T1-weighted	T1	T1-weighted
CE T1 FS	contrast-enhanced T1-weighted, with fat suppression	T1 FS	T1-weighted, with fat suppression
CT	computed tomography	T2	T2-weighted
CTA	CT angiography	T2 FS	T2-weighted, with fat suppression
DSA	digital subtraction angiography	TOF	time of flight magnetic resonance angiography
DWI	diffusion weighted imaging	TTP	time to peak