

Magnetic Resonance Scanning and Epilepsy

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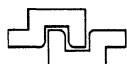
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Magnetic Resonance Scanning and Epilepsy

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PREFACE

It was only in 1980 that the first recognisable magnetic resonance images of the human brain were published, by Moore and Holland from Nottingham University in England. There then followed a number of clinical trials of brain imaging, the most notable from the Hammersmith Hospital in London using a system designed by EMI, the original manufacturers of the first CT machines. A true revolution in medicine has ensued; in only a few years there are thousands of scanning units, and magnetic resonance imaging (MRI) has assumed a central importance in medical investigation. It is an extraordinary fact that within a few years of development, the esoteric physics of nuclear spin, angular momentum, and magnetic vector precession were harnessed to provide exquisite images of living anatomy; modern science has no greater tribute.

That indisputable king of neurology and the oldest of recorded conditions, epilepsy, has not been untouched by the new technology; indeed, it is our view that the introduction of MRI has been as important to epilepsy as was that of electroencephalography (EEG) in the late 1930s. Now, for the first time, the structural and aetiological basis of the condition is susceptible to thorough investigation, and MRI can provide structural detail to parallel the functional detail of EEG. MRI has the same potential as had EEG over 50 years ago, to provide a new level of understanding of the basic mechanisms, the clinical features and the treatment of epilepsy.

It was against this background that the present volume was conceived. The time seemed right for a review of the current position of MRI and MRS in epilepsy, a summary of current research, and an indication of the likely direction of future research. No single alternative text exists on this topic, and as research crosses the conventional boundaries of disciplines, much original work is not easily accessible to the general reader. The volume contains contributions from neurologists, neurophysiologists, radiologists, physicists and neurosurgeons, from Europe, North America and Australia; we see this drawing together of experience from widely differing backgrounds as an important feature of the work. We have organised the book into sections, each dealing with specific clinical issues, and have throughout attempted closely to apply the subject to the important clinical questions (of diagnosis, treatment, outcome, prevention) as well as the basic issues of pathophysiology and pathogenesis. We hope that the book will be of interest to medical specialists in different disciplines (neurologists, radiologists, neurophysiologists, neurosurgeons, psychiatrists) as well as to physicists working in the field of epilepsy.

Our grateful thanks are extended to the Scientific Division of NATO who saw the importance of the topic, and kindly sponsored the work, and to Ms Carolyn Cowey for her invaluable assistance in preparing this manuscript.

Simon Shorvon, for the editors

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