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Magnetic Resonance in Dementia

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Magnetic Resonance in Dementia.

Jaap Valk, Frederik Barkhof, and Philip Scheltens. New York, NY: Springer; 2002. 353 pages, \$199.

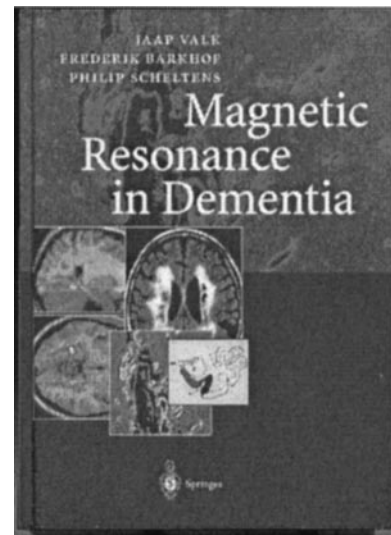
It is unusual when a textbook can successfully bridge the gap between clinical medicine and imaging. In general, authors tend to concentrate solely on their areas of specialty, often skimming over critical “tie-ins” from other fields. For the most part, this did not occur in the book *Magnetic Resonance in Dementia* by Professors Jaap Valk, Frederick Barkhof, and Philip Scheltens. These authors have pulled clinical information, neuropathology, and neuroimaging together into a well-illustrated, informative, properly referenced, and useful text.

Neuroradiologists are increasingly called upon to identify, measure, and quantify those brain abnormalities that may lead to an early diagnosis of a dementing process. To that end, this book brings MR imaging to bear on dementia secondary to neurodegenerative disorders, disorders that affect primarily the white matter, inborn errors of metabolism, vascular dementia, and other causes of progressive dementia.

Diffusion-weighted imaging, perfusion imaging, MR spectroscopy, functional (cortical activation) MR imaging, segmentation schemes, single photon emission CT, and positron emission tomography are briefly introduced early in the text and are then applied to a number of diseases throughout the text. Obviously, because of their relative rarity, not all causes of dementia have been analyzed with each of these techniques, but the more common diseases, such as Alzheimer disease, Parkinson disease, and dementia caused by vascular disease, are subjected to such analysis. The authors have accumulated many different cases, including some that a radiologist infrequently, if ever, will encounter. The images are of excellent quality, and in a few places in the book, they are accompanied by illuminating pathologic correlates (both gross and microscopic).

Concerning the book’s organization and content, it is noteworthy that abundant high quality illustrative materials are presented. One does not get bogged down in long descriptive text. Although this is good, providing the reader with a full flavor of the entity under consideration, it does seem that the multisection display (eg, frequent use of nine sections to show an abnormality) is a bit excessive. However, this is far better than having a disease under-illustrated, leaving the reader to wonder, “What did the other sections show?”

The authors request in their preface that readers of the text send in their “critical comments.” To this reviewer, *Magnetic Resonance in Dementia* constitutes a wonderful start toward bringing such diverse material together. However, some nagging problems remain. Diseases are dealt with in an uneven way. Some, such as Alzheimer disease, are complete in their description and contain all the important clinical, pathologic, and imaging information one could



want. On the other hand, some diseases are treated in a disappointingly brief manner. For instance, for adrenoleukodystrophy, the explanation for the white matter changes and the underlying pathophysiology is brief and insufficient and only routine imaging is shown; no recent MR techniques are illustrated or significantly described. This observation is true for many entities, and the wide variation in dealing with various diseases is bothersome. It will be helpful if future editions of the text delve deeply into many of the diseases that result in dementia as completely as the current edition does regarding Alzheimer disease. Other nonfatal but irksome problems grab one’s attention. An image of a 17-year-old boy with Sydenham chorea, for example, shows a large caudate and putamenal mass, which the authors say is “highly characteristic for this disease”; however, they never say what the mass is. No state-of-the-art techniques, such as diffusion-weighted imaging or MR spectroscopy, are brought to bear on not infrequently encountered diseases such as progressive multifocal leukoencephalopathy, HIV encephalitis, or metachromatic leukodystrophy. Disconnects between the figure labeling and the text occur in a few places; for example, in the text about progressive multifocal leukoencephalopathy, the associated illustrations show subacute sclerosing parencephalitis. Despite these criticisms, the book forms a solid basis for categorizing and understanding the imaging of dementia.

In summary, this is a highly readable book that brings together the diverse pathologic conditions that cause dementia. A number of these conditions will be unfamiliar to many readers, whereas others are familiar but are summarized well, forming a valuable review of this field.