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## **Clinical Neuroradiology: A Case-Based Approach**

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## BOOK REVIEW

**Clinical Neuroradiology: A Case-Based Approach**

G.M. Hathout, Cambridge University Press; 2009, 324 pages, \$125.00.

Among the plethora of case review publications, *Clinical Neuroradiology: A Case-Based Approach* stands out in concept, content, and educational value. Too often “case reviews” are superficial, supply just the minimum of information, and leave the reader with little in-depth knowledge. In contradistinction, Dr. Gasser M. Hathout has drawn together, in a 272-page hardcover book, an excellent series of cases, which is organized as follows: There are 8 chapters (“Cerebellum,” “Medulla,” “Pons,” “Midbrain,” “Basal Ganglia,” “Diencephalon,” “Cerebral Cortex,” and “Stroke-Imaging and Therapy”). Each chapter begins with an anatomic and functional description of the major structure under consideration, including anatomic and functional pathway descriptions and illustrations. This then is followed by case material (CT and MR images) that is linked to a clinical history. The diagnosis is given, and an in-depth discussion follows, often with strong anatomic/physiologic correlates.

What is most appealing about this book and how it differs from other books with case presentations is that one starts reading about a given brain area first and then the reader sees abnormalities affecting that area. As one example, take the chapter on the basal ganglia. Here we start with basic concepts of motor dysfunction and move seamlessly to diagrams/discussions on nomenclature, anatomic connectivity of structures, and functional anatomy. Remember, this is done before any cases are presented so that the importance of identifying a lesion in a certain structure is clear. So the reader now knows, before looking at images, the exact structures that make up the basal ganglia and reviews the anatomy of the nucleus accumbens, the ventral striatum, the substantia nigra and the interconnections between the caudate and putamen, the medullary lamina, and parts of the substantia nigra. The interplay and modulation effects are simply and clearly described and diagrammed. The author takes the reader gently through increas-

ingly complex functional anatomy, bringing nicely into play excitatory and inhibitory neurotransmitters and reviewing structures such as the ansa lenticularis and lenticular fasciculus and pathways for neural transmission.

This pattern of learning is repeated in the 8 chapters. The selection of cases is excellent, and the discussions that precede and follow each case are informative and described in adequate detail. Within each discussion, pertinent questions are posed to the reader—this increases the interest and readability of the material.

There are, however, a few questionable areas in the book. For instance, a case of what the authors call “diffuse cerebellar (extra pontine) myelinolysis” abnormal hyperintensities is not at all convincing—a better image would have been required to prove their point. To this reviewer, it is a bit disturbing to have no spine imaging or clinical material that includes spinal cord dysfunction in a book broadly termed *Clinical Neuroradiology*. Since when is the spinal cord not part of the purview of neuroradiology?

The chapter on stroke (imaging and therapy) deserves an extra comment because it is not constructed like the other chapters. Specifically, this chapter takes the reader from the basics of stroke imaging, diffusion-weighted imaging (DWI) (with the physics of this sequence explained), DWI (with time-to-peak, cerebral blood volume, cerebral blood flow, and mean transit time explained and shown), intravenous thrombolysis, and intra-arterial thrombolysis. It is informative, up-to-date, and well written.

Overall, this is an excellent case study book, and it importantly provides an enjoyable and painless way of learning (and retaining) detailed neuroanatomy and neurophysiology. It can be confidentially recommended as an individual purchase or for a departmental/sectional library.

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