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AJNR Am J Neuroradiol 2009, 30 (8) E125

doi: <https://doi.org/10.3174/ajnr.A1685>

<http://www.ajnr.org/content/30/8/E125>

This information is current as
of August 7, 2025.

Neuroimaging in Neurology: An Interactive CD

D.C. Preston and B.E. Shapiro, eds. Saunders Elsevier; 2007, \$145.00.

Neuroimaging in Neurology: An Interactive CD is a 275-MB CD, designed by Drs Preston and Shapiro (both neurologists) to allow the viewer to interact with more than 600 images, including both normal and abnormal findings on MR imaging and CT of the brain and spine. Included also are images of conventional neuroangiography.

The CD starts with very basic information on pulse sequences and is followed by anatomic depictions. With these, the reader can place an arrow on the words identifying a given structure and that anatomy will be highlighted, or point to a structure to display the proper name. The anatomy shown is quite elementary and would be satisfying only to a beginning trainee. Some areas are mislabeled—for example, on a coronal T1-weighted image (T1WI) at the level of the thalamus, the left superior temporal gyrus is incorrectly called the superior frontal gyrus, or when one points to the transverse ligament behind the odontoid, the label says CSF. Much of the anatomy is simplistically labeled. For instance in the cervical spinal cord, one can identify the differences between central gray matter and peripheral white matter, but the label says “spinal cord.” Likewise in the vertebral basilar angiogram, only the major branches are identified, so labels are missing from clearly seen vessels such as the parieto-occipital artery or the calcarine artery. The power of a CD such as this was not used because detailed anatomy is not displayed.

After this disappointing start, the CD launches into pathologic conditions. These conditions are divided into degenerative diseases of the brain, demyelinating processes, developmental and congenital disorders, herniation syndromes, hydrocephalus, infectious/granulomatous diseases, metabolic disorders, peripheral nerve disorders, a variety of spine diseases, and stroke—both ischemic and hemorrhagic. A brief history is given, followed by images and links to highlight the findings. Brief descriptions of the imaging findings and their clinical significance are given. This portion of the disk suc-

ceeds to an extent, but in some cases, the imaging is incomplete or incompletely described. For example, in their first arteriogram of an arteriovenous malformation, the authors only mention a “tangle of blood vessels arising from branches of the LMCA.” They do not show the more-detailed anatomy, label a venous aneurysm, or show the early draining veins.

Embedded within this CD is one PowerPoint lecture on the characteristics of cerebral hemorrhage. Here findings are not well presented. For instance, the authors show a model of hyperacute hemorrhage on T1WI and point to a very bright circle drawn on the image and state that this “results in a slightly hypointense signal intensity on T1.” This is, therefore, incorrectly described and labeled. Even then when the authors show case material of a hyperacute intracerebral hemorrhage in case 1, they are inconsistent in describing the findings on T1WI in the legend, referring to “dark signal intensity on T1,” where the signal intensity is clearly more intense than the surrounding gray matter. In the body of the descriptive material, the authors call the feature “slightly hypointense”—so there are not only inconsistencies in the description but the authors do not indicate to what structure this is intense. Other curious areas pop up in the text. For instance, a “closed-lip schizencephaly” is clearly an open-lip schizencephaly.

There are, however, nice examples of diseases, and the interactive nature of the CD allows the reader to ask the program to point out certain features. As just 3 examples, the reader can see the abnormal signal intensity of mesial temporal sclerosis, the areas involved in herpes encephalitis, and the multiple lobes affected in progressive multifocal leukoencephalopathy. In addition, the accompanying clinical history and disease description add value to each case. There is considerable educational value in all of these cases, and in this day of computer-based learning, I am sure this CD will be of interest to neurologists and residents/fellows in neuroradiology.

DOI 10.3174/ajnr.A1685

