

# BOOK REVIEW

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## A Review of *Essentials of Neuropathology*

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**REFERENCE:** Schochet, S. S. and McCormick, W. F., *Essentials of Neuropathology*, Appleton-Century-Crofts, New York, 1979, 191 pages, no price listed.

*Essentials of Neuropathology*, as the authors indicate in the introduction, "is intended primarily for the student who wants more information than is available in the usual pathology or neurology textbook." This is evident as this softcover textbook is 191 pages long. Generally the book fulfills this purpose and often the other stated purpose of clarifying the more important or confusing topics. Its major shortcoming is the chapter on trauma.

The book is organized in the usual manner, with chapters on malformations and perinatal lesions, trauma, intoxication, infections, and so forth as well as the peripheral nervous system and muscle. It is quite current with respect to the state of knowledge of the various disease processes and diagnostic techniques (for example, muscle histochemistry). The text and photographic illustrations provide fine correlations between light and electron microscopy (EM).

The light and EM photographic illustrations are excellent, with sharp definition, and are representative of most neuropathologic microscopic lesions. The gross brain photographs are variable. Too many are washed out. Figure 68, of a pontine glioma, shows a completely white brain stem section and represents a nonillustration.

The chapter on trauma is naive and very spotty. It is 16 pages in length, only 9 address themselves to trauma, and only 3<sup>3</sup>/<sub>4</sub> pages of textual treatment of trauma are found. The rest of the chapter is devoted to herniations and radionecrosis. Herniations are frequently seen in many terminal neuropathologic processes and should not compete for space with trauma. Radionecrosis seems to have been thrown in at the end for want of another spot (radiation can be considered a form of trauma but the mechanism of radionecrosis is not traumatic).

The discussion of skull fractures is superficial. The diagram on skull fractures is a good illustration of poor concepts. It does not indicate the usual mechanism of a linear skull fracture, nor does it correlate direction of impact with the usual path(s) of linear fractures, and it skips basilar fractures entirely. The section on epidural hematomas states that 85% are associated with skull fractures. This incidence is too low. If the forensic science autopsy is properly done and skull fractures are carefully sought for (such as by stripping the dura) the true incidence of skull fractures is nearly approximated (as opposed to the radiological incidence or the hospital autopsy incidence). Thus E. Freytag (*Archives of Pathology*, Vol.

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75, 1963, pp. 402–413) states that epidural hematomas unassociated with skull fractures are extremely rare. Of 211 traumatic deaths with epidural hematomas all but 4 were associated with skull fractures. Two of these were caused by surgery and two were under vertex impacts. These latter two were not significant space-occupying lesions.

The section on contrecoup contusions is a very concise summary and indicates that these lesions usually occur in decelerating impacts (falls) to the head but may be caused by blows accelerating to the head. The latter point is an important reminder for attorneys and sometimes expert witnesses who tend to make too much of the contrecoup lesion.

In the brief section on contusions a number of subtypes and patterns are omitted, such as intermediate contusions, gliding contusions, contusion hematomas, infantile contusions, and contusion patterns, perhaps because of space limitations. The most significant contusion of all in terms of its mortality, morbidity, and high frequency in forensic pathology is the brain stem contusion, and it is entirely overlooked! This oversight is so awkward as to be absurd.

Fracture lacerations are not mentioned. They should be as they are common and clinically important in the pathogenesis of the meningocerebral cicatrix and focal epilepsy. Lacerations are defined only as stretch-induced tears in tissues.

Ballistic injuries are given adequate treatment, but why 3½ pages are devoted to them while other significant lesions are entirely neglected is a mystery.

The section on herniations resulting from expanding brain lesions is well done. Secondary brain stem (Duret) hemorrhages are discussed in some depth, more so than in larger textbooks of pathology, perhaps because the clinician tends to think of them as a common final event of fatal herniation. It is important to remember that fatal brain stem (axial) herniation may occur in the absence of Duret hemorrhages. Another important point to be made would have been the contrasting characteristics of Duret hemorrhages and brain stem contusions, which are occasionally very difficult.

Posttraumatic brain swelling is entirely neglected. Focal swelling often occurs in regions of contusion, and generalized swelling is often present because of systemic factors in bodily trauma unassociated with head trauma (insanguination, exsanguination, cardiac tamponade, drug overdose, and so forth).

The chapter on dementias and degenerations has one important oversight. In the section on arteriosclerotic dementia, the latter is not considered a common cause of dementia and is said to be clinically overdiagnosed (in patients with Alzheimer's disease and arteriosclerosis). Multi-infarct dementia is not mentioned. It is usually due to arteriosclerosis (with cerebral thrombosis or embolism, or both) and is fairly common, comprising 20% of cases of dementia subjected to autopsied neuropathologic study from the New Mexico State Hospital. It produces dementia by the mechanism of disconnection syndrome(s) caused by the multiple infarcts.

In summary, I recommend the book as a convenient, up-to-date, concise primer on "natural" diseases of the nervous system. The chapter on trauma is not informative and should be ignored.