

Management of Adults With Traumatic Brain Injury

edited by David B. Arciniegas, MD; Nathan D. Zasler, MD; Rodney D. Vanderploeg, PhD; and Michael S. Jaffee, MD. Washington, DC, and London, England, American Psychiatric Publishing, 2013, 561 pages, \$82.00 (paper).

Traumatic brain injury (TBI) ranks among common conditions today, associated with athletics, aging, substance use, military duty, and violence. As physicians, we all see it, regardless of specialty, community, or clinical setting. Paradoxically, even the few who spend their careers specializing in TBI encounter only a corner of the field. TBI belongs to all of us, yet all of TBI belongs to none of us. These realities render TBI a neglected “orphan” disease. Hopefully, this small encyclopedia will enhance our competence in caring for TBI.

The editors faced a major challenge in selecting chapter headings. They might have chosen brain areas or organelles, or demographic characteristics of sufferers, or causative factors. Instead, they employed a device both original and practical. After starting with an overview chapter and 2 chapters on evaluation and assessment, they chose 13 chapter headings focusing on clinical presentations: consciousness, cognition, mood-affect, anxiety, posttraumatic stress disorder, psychosis, aggression, apathy, substance use disorders, headache, seizure-epilepsy, sleep-fatigue, and sensory impairment. The final 5 chapters cover special subgroups within the TBI field: elderly, sports, military and veterans, persisting symptoms, and forensic issues. This organizational plan suits the physician audience in that it reflects the clinical problems we encounter. Moreover, since TBI patients often present with 2 or several of these conditions, the schema allows easy access to information in various chapters, with extrapolation to the patient. A 4-page bibliography, a 3-page list of relevant websites, and a 25-page index further guide readers to useful information.

The authors' credentials vary widely, reflecting the tome's broad orientation. They range from a student in kinesiology to the luminary neuroscientist-clinician Stuart Yudofsky. About two-thirds of the authors are academic investigator-clinicians; the remaining one-third are from clinical medicine, nursing, psychology, and rehabilitation. Most are steeped in TBI clinical services and/or research.

Reviewing a volume of such breadth presents a daunting assignment. After reading it, I chose 9 chapters for further in-depth attention: the first 3 chapters (a general orientation), the chapter on substance use disorder (in which I have had extensive experience), and the final 5 chapters on special topics.

The first 3 chapters, aimed at the educational level of general physicians, provide state-of-the-art-and-science information for the practitioner. They contain 4 boxes (with definitions), 8 tables, and 18 figures. Each chapter ends with several “key clinical points.” While reviewing them, I asked, “What might I add from my own clinical experience?” Seven substantive points came to mind.

First, when the book discusses conducting a history and physical examination of patients with TBI, assessment of the physical forces involved in relation to the anatomy and physiology of the brain is not fully explicated. Was the blow to the front, back, side, or oblique areas of the head? Right or left side? Rotational or not? Coup only or contracoup also? Elements of the force might include the weight of an object, the speed of a vehicle, the proximity to a blast, or the blunt-versus-pointed nature of a weapon.

For penetrating injuries, distinguishing shrapnel (variable size, slow speed, septic) from rifle bullet (larger, faster, and sometimes having a tendency to tumble, more damage, sterile) from pistol bullet (smaller and slower, less damage, usually sterile) is important. Tracing the brain structures from the wound of entry to the projectile itself or to the wound of exit can aid in estimating anatomic-functional distributions of brain damage.

For skull fractures over the cortical areas, the extent of the fracture, the depth of depression of bone fragments, and the brain area affected can provide information useful for treatment, rehabilitation, and prognosis.

Relevant for psychiatrists is that many survivable wounds involve the frontal lobes, whereas brain stem and midbrain injuries are apt to be fatal.

X-rays should be considered if in doubt: several of my patients injured in warfare or disaster situations did not know that they had a penetrating head injury but indeed did have shrapnel, a bullet, or another intracranial metal object.

Traumatic events in which the head is unscathed externally but the brain is damaged (eg, prolonged shock, asphyxiation, blast, starvation) received passing attention. However, the topic warrants a separate section for emphasis, since this mechanism for TBI can be overlooked.

Lastly, I would add a few items to Box 2.1, “Common Elements of the Differential Diagnosis of Event-Related Disturbances of Consciousness,” and to Box 2.2, “Common Elements of the Differential Diagnosis of Event-Related Sensorimotor Abnormalities,” as follows:

- Infections can precipitate falls or fights (cerebral malaria, HIV encephalitis, fungal meningitis, Lyme disease) or can complicate basilar skull fracture
- Malnutrition lesions can lead to accidents and falls in refugees and concentration camp survivors (vitamin B deficiencies, diffuse encephalomalacia associated with starvation and massive weight loss)
- Prescribed medications may affect balance or blood pressure, leading to falls and accidents (eg, omeprazole, opioids, benzodiazepines, antihypertensives, antidepressants, antipsychotics, anticancer drugs)
- Torture of refugees and prisoners of war can involve beatings about the head, asphyxiation, thermal extremes, starvation, and severe weight loss, which can affect reaction time, balance, and judgment.

The chapter on substance use disorders contains much useful information for people with comorbid TBI and substance use disorders. A major omission of the book concerns the propensity of people with TBI (and other forms of organic brain disorders) to become amnesic or otherwise impaired on smaller than usual doses, sometimes as little as 2 standard drinks (0.5 ounces of ethanol per drink). Opioid maintenance for TBI patients with persisting opioid use disorder should also be noted in a text of this scope. Buprenorphine may produce less anticholinergic memory impairment than methadone, and trough-peak levels of either drug can help to keep doses low but in the therapeutic window (since dose-to-level ratios vary widely across patients). Another quibble involved the use of the brief CAGE questionnaire for assessment and screening in this population (per recommendation of the American College of Surgeons): the CAGE requires judgment, memory, insight, and prosody, which TBI can impair.

Book Review

My re-reading of the final 5 chapters on special patient subgroups failed to reveal any notable deficiencies. Each chapter comprised an excellent entrée to the subject, with salient references to classic articles and recent research.

Readership could well consist of all medical students during their third or fourth year (what a boon if each could receive a copy!). A re-reading during residency would build on the wealth of TBI cases the average resident would have treated during training. Although the volume is printed by American Psychiatric Publishing, its content is generic enough for any medical specialty. Finally, the marked-up volume could see further service on the practitioner's

shelf, awaiting the atypical presentation or the refractory symptom. Other audiences might include nurses, neuropsychologists, and various therapists working with TBI patients.

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