

### Book Review: *Brain Injury: Applications From War and Terrorism*

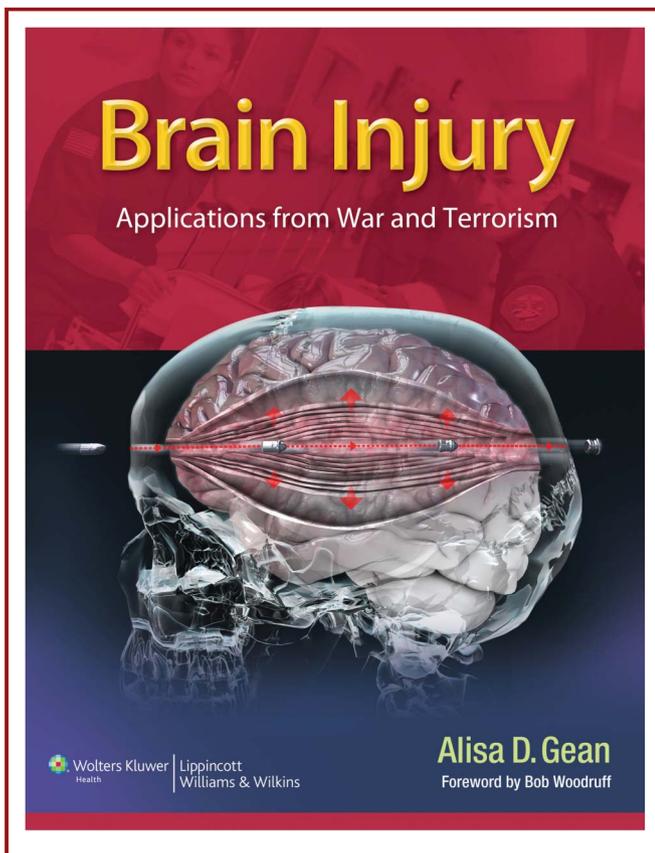
By: Alisa D. Gean  
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The United States and its Allies have been involved in military conflicts in Iraq and Afghanistan since 2001. Since that time, an incredible burden has been borne by our soldiers, their families, and our country. This conflict is personal for me. My department treated the vast majority of the head- and spine-injured combat casualties returning from these theatres to Walter Reed and Bethesda, and since my retirement from the military in 2007, my friends have continued to care for these patients. My son grew up seeing my colleagues and I deploy as physicians to the war zone to care for these brave men and women with horrendous injuries,

and I have since seen him and his friends deploy to combat on multiple occasions. Fortunately, to date, he has always come home intact, but many of his friends have not been so blessed.

Hippocrates once said that “War is the only proper school of the surgeon.” During times of massive casualty influx, often with extreme injuries and polytrauma, new perspectives and techniques are born of necessity. Many of our advances in medicine have emerged from the combat experience. In previous conflicts, most of the seminal literature and texts started emerging approximately 10 to 15 years after the conflict, after the authors had time to digest the experience, gather outcomes, debate the observations, and properly articulate the lessons learned. In this protracted conflict, we are now reaching that timeline.

I am delighted that Dr Alisa Gean has written *Brain Injury: Applications From War and Terrorism*. In this heavily illustrated text, she effectively captures the common types of injuries and the austere environment in which the care is initially delivered and carefully reviews the extensive observational literature that has emerged to date from this conflict. She discusses the mechanisms of injury, ballistics, and how improvised explosive device (IED) blasts may differ from the conventional wounds seen in most civilian trauma centers. She clarifies what is currently known, different theories regarding potential mechanisms, and where further study is required. She also appropriately emphasizes that this age of terrorism will likely bring similar injuries to our civilian trauma centers. As a neuroradiologist, Dr Gean gives an excellent overview of the current use and potential future applications of advanced imaging techniques to manage these injuries. The longest chapter of the text is organized into 12 lessons describing how combat traumatic brain injury (TBI) is different from civilian TBI. The lessons she proposes in this chapter include (1) Military Patients Are More Homogeneous Than Civilian Patients, (2) Patient Triage and Transport Are Different, (3) The Imaging Approach Is Different in War and Terrorism, (4) Blast-Related Trauma Is the Most Common Mechanism of Injury in War and Terrorist Attacks, (5) Polytrauma Is More Common, (6) Life-Threatening Hemorrhage Is More Common, (7) Hyperthermia and Burns Are More Common, (8) Assessment of the True Extent of Injury in the Acute Setting Is More Difficult, (9) Facial Injuries Are More Common and Complex, (10) Stroke and Cerebrovascular Injuries Are More Common, (11) Combat TBI Patients Are Particularly Vulnerable to Secondary TBI, and (12) Post-traumatic Stress Disorder (PTSD) Is More Common Following Combat Than following Civilian Trauma. Throughout the text, especially when presenting illustrative cases, she highlights key learning points, providing a concise summary of principles helpful for a quick review. The pictures Dr Gean includes throughout the text are powerful reminders of the extensive nature of these injuries, and begin to



illicit the emotions one feels when caring for these patients day after day.

Dr Gean's background as a neuroradiologist with an extensive expertise in neurotrauma imaging is clear in this textbook. I congratulate her on volunteering her time and energy to serve at Landstuhl Army Medical Center caring for these patients and for completing this excellent summary of the literature and collective neurotrauma observations from these conflicts to date. This text does not highlight actual clinical management in any significant detail except for imaging protocols. The author frequently provides brief clinical management insights and references clinical management guidelines, such as the importance of preventing cerebrospinal fluid leak (CSF) in craniofacial injuries because of the increased incidence of infection. However, techniques to prevent the CSF leak are not mentioned. This is likely the result of having a single author from one subspecialty perspective, instead of a number of authors representing many subspecialties and experience throughout all levels of care. Overall, the author has done a fabulous job at capturing all major points of view and displays an impressive knowledge of the military health care system. An example is her recognition of the TBI protocol instituted at the medic level for the management of soldiers exposed to a blast. However, there are times when a more comprehensive description could likely have been given by a different subspecialist with more extensive operational experience. Examples of this type of information is the frequent breakdown of computed tomography scans because of the sandy environment, the inability to transfer casualties between levels of care because of tactical or weather concerns despite complete air superiority, and the resulting alternative management strategies for patients in these situations. Another example where a broader author group might have complemented this text is the description of the severity of behind armor blunt trauma. The author points out that concussions can occur, but does not reference the more serious large contusions and open depressed skull fractures that often require operative intervention. Likewise, theoretical concepts such as copper jacketed bullets do not fragment are reported; however, the reality is many of these rounds in real life have significant fragmentation in the head depending on the residual kinetic energy and bone that is impacted. These minor omissions do not significantly detract from the essential accuracy of this text. This book helps fill a void in our literature that will hopefully continue to be populated over the next 10 years.

Overall, this is an excellent book that highlights the unique brain injuries seen during recent combat, explores the pathophysiology of these injuries, provides a detailed description of the imaging for these patients, and contrasts the combat TBI from those routinely encountered in civilian practice. I congratulate Professor Gean on producing this work. With terrorism threats and the potential of blast injuries becoming more prevalent at home, this book should be on the shelf of any physician actively practicing at a trauma center.

## Disclosure

The author has no personal, financial, or institutional interest in any of the drugs, materials, or devices described in this article.

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## Book Review: *Neurosurgery Tricks of the Trade: Spine and Peripheral Nerves*

By: Remi Nader, Scott C. Berta, Cristian Gragnaniello, Abdulrahman J. Sabbagh, Michael L. Levy  
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The editors of this book have taken on a monumental task. Drs Nader, Berta, Gragnaniello, Sabbagh, and Levy have assembled an international group of >160 contributors from 20 countries to compile this ambitious text on the essentials of spine and peripheral nerve surgery. This work, which comprises >100 chapters, covers the breadth of these fields with a thoughtful, practical approach directed to practicing neurosurgeons and residents. The editors have chosen an interesting organizational format in which the topics are divided into either “approach-based” or “pathology-based” chapters. This distinction, although somewhat artificial, helps to provide uniformity to the presentations. In fact, the outlines of the 2 types of chapters are really quite similar: There is an appropriate emphasis on patient selection, preparation for surgery, key steps, potential pitfalls, complications, and alternative procedures. The distinction becomes somewhat confusing when there are “pathology-based” chapters with “approach” in the title and “approach-based” chapters within the Spine by Pathology section of the book. In any case, this is a minor distraction; the chapters are generally very well written, concise, and well organized.

As in any multiauthor text, there are inevitable redundancy and variability in style and quality. The illustrations are generally excellent, although the editing is lacking in some cases (for example, the legends for Figures 87.1 and 87.3 are transposed). Two suggestions for future editions would be to label arteries and nerves in different colors (they are both red in several figures) and to present the anatomic figures before the