testing in concussion and some redundancy there. In general, the
sections on concussion suffer from the fact that the field of
concussion is moving forward rapidly and logistics do not allow for
up-to-date information to be included in a textbook format. This is
understandable but the book has that limitation. For example, even
the chapter written by Bob Cantu describing various grading
systems and concussion management approaches does not include
his most recent grading system published in 2001 which has
significant changes from that of his previous guidelines. Perhaps
reflecting this advancement in the science of a concussion, it would
have been of some use to include some of the newer data perhaps in
the future/research section. For example, along with discussion of
neuroimaging and functional imaging, data published from a number
of groups regarding electrophysiological concussion analysis might
have been of some interest. Moreover, although up-to-date data can
not necessarily be included in such a textbook, at least reference
should be made to some of the significant controversies in the
concussion literature regarding grading systems, return to play and
the relative importance of loss of consciousness, post-traumatic
amnesia and post-concussion symptoms. A particularly nice feature
of the book is the attempt to include a chapter by a helmet
manufacturer to reflect the state of the art of that piece of equipment.
There would probably be some interest as well to look at other
equipment such as visors, mouthguards, elbow pads and cowboy
collars. This has practical implications for trainers and team doctors
alike. Also of some potential value would have been a section on
concussion rehabilitation, as there is much current interest and effort
in that particular approach to management.

In summary, while no book can be entirely comprehensive for
such a large and rapidly progressing field, this book contains a
remarkable amount of solid information, well-written and presented,
well-illustrated with appropriate figures and tables and will be a
great addition to any collection in the sport medicine office, athletic
training room/locker room and indeed parts of it relevant directly to
the sideline itself.

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The Vegetative State: Medical Facts, Ethical and Legal Dilemmas. 2002. By Brian Jennett. Published by Cambridge University Press. 228 pages. C$67.00 approx.

Brian Jennett and Fred Plumb coined the term “persistent
vegetative state” in 1972 to describe wakefulness, including wake
and sleep cycles and arousability from sleep, but no evidence of
awareness. Vegetative (breathing and basic homeostatic) functions
were intact. The term “persistent” subsequently caused confusion
because some patients later regained awareness to variable degrees.
Currently “vegetative state” applies to the above syndrome, and
“permanent vegetative state” is the prognostic term used when the
patient will never develop awareness or a state better than
vegetative. Concepts are still evolving for vegetative and minimally
conscious states. Occasionally patients regain isolated behaviours
including crying or mumbling a few repeated words. While relatives
seize upon such behaviours as evidence of cognitive function, they
do not indicate that widely integrated cerebral activity has returned.

How can we be sure that there is no cognitive function if we rely
only on behavioural observations? Jennett sites three pieces of
evidence that discount cognitive function in these and vegetative
patients: no behavioural response to indicate pain and suffering; a
decrease in total cerebral blood flow to values comparable to those
induced by anesthesia; and extensive bilateral damage to the
cerebral hemispheres on pathological examination. He does not,
however, mention electrophysiological and functional neuro-
imaging studies that can explore information processing in more
precise ways.

The book provides a well-written summary of the evolution of
the concepts of vegetative and minimally conscious states, estimates
of their incidence and prevalence and major clinical features. The
underlying patterns of pathology are reviewed briefly but accurately.
There is a brief discussion of management principles. A strength of
the book is the exploration of physician and societal attitudes about
vegetative and minimally conscious states as “lives not worth living”. Arguments for limiting and withdrawing care, including
“artificial nutrition and hydration,” are reviewed from ethical and
legal standpoints. The primacy of autonomy of the patient is well
discussed as the most fundamental component of end-of-life
decision-making. Landmark American and European legal cases are
presented, perhaps to excess (92 pages).

A weakness is the emphasis on trauma with little attention to
other causes, such as ischemic encephalopathy after cardiac arrest;
this oversight reflects the author’s main interest. In discussing
prognosis, only clinical predictors are presented. There is no
mention of electrophysiological and other laboratory tests that have
shown effectiveness in arriving at earlier prognostic determinations
for post-cardiac arrest and trauma patients.

The book will be of interest to those who see severely brain-
damaged patients both acutely and in later phases of their care, e.g.,
neurologists, neurosurgeons, intensivists and rehabilitation
physicians. The ethical discussions are especially useful. However,
because of limitations in scope of etiologies and prognostic
evaluation, the book is an incomplete treatise on the subject of
vegetative and minimally conscious states.

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