

Book Reviews

B. Raymond Fink, M.D., Editor

Brain Death: Interrelated Medical and Social Issues. EDITED BY JULIUS KOREIN. New York, New York Academy of Sciences, 1978. Pages: 454. Price: \$59.00.

This book reports the proceedings of a conference entitled "Brain Death," held in November 1977, sponsored by the New York Academy of Sciences and the New York Blood Center, Inc. The conference brought together a cross-section of disciplines interested in the vexing and controversial problem of brain death. They included neurosurgeons, neurologists, anesthesiologists, transplant surgeons, attorneys, philosophers, ministers and sociologists. If one reads this book in the hopes that it will resolve the important complex issues and thereby provide security and peace of mind in any decisions involving brain death, then one will surely be disappointed. By the same token, the book contains much that is reassuring, and will provide the interested physician with solid background information and some guidelines upon which he might base at least an intelligent, albeit still controversial, decision.

Semantics became a very large issue in the proceedings of this conference, and terms such as brain death, cerebral death, brain-stem death, neocortical death, persistent vegetative state, noncognitive state, irreversible coma, apallic syndrome, and respirator brain were at times used interchangeably, and with some confusion. To the editor's credit, a glossary of these terms is provided in the opening pages of the book, along with editorial footnotes throughout the book, in an effort to clarify any confusion that might result from the use of these terms. Although there was some disagreement, there was a consensus that the electroencephalogram, properly used, is a very powerful tool in diagnosing brain death. It was, however, emphasized that the electroencephalogram alone should never be relied upon without additional information gained from neurologic examination and assessment of cerebral blood flow. It was reassuring to learn that in patients with true brain death (defined as total destruction of the brain with no cerebral circulation), cardiac activity continued for a mean period of only three to five days. Hence, contrary to common belief, the state of total brain death is never a prolonged state.

The major controversy, of course, revolves around those patients who remain in a persistent vegetative state. This is a state wherein the neocortex only is destroyed, while brain-stem function of some sort continues with or without supportive measures. Continued existence in this state can be quite prolonged, and it is about these patients that the controversy of "euthanasia" revolves. Not surprisingly, but still somewhat disappointingly, no real progress was made at this conference toward resolving this question. An important issue that repeatedly surfaced during the conference was the recognition that although standards for diagnosing total brain death seemed reasonable and usually reliable for the adult, they can be (and have been) misleading when applied to children. Hence, there was the repeated caution to be most conservative in declaring total brain death in children. The value of the book is enhanced by open discussions, which follow each of the eight sections. Contributors such as Dr. Fred Plum of Cornell provide considerable insight into the overall problem. Indeed, at one point he laments "the lack of experimental work to support any of the particular viewpoints that have been advanced," and following a presentation concerned with the difficulties in diagnosing brain death, he states, "Many observers, including myself, think the diagnosis of brain death is really not a very big problem." It is always refreshing to be

confronted with such bold statements reflecting both experience and candor.

Any anesthesiologist involved with the management of intensive care patients will wish to have this volume on his bookshelf. The diversity of viewpoints, as well as the objective information provided, should offer both reassurance and useful information for the physician involved in the difficult decision of determining brain death.

JOHN D. MICHEFELDER, M.D.
Department of Anesthesiology
Mayo Clinic
Rochester, Minnesota 55901

Low Flow and Closed System Anesthesia. EDITED BY J. ANTONIO ALDRETE, HARRY J. LOWE, AND ROBERT W. VIRTUE. New York, Grune and Stratton, 1979. Pages: 335. Price: \$19.50.

First let me nail my colors to the mast. Like the editors of this volume, I am a believer. As a believer I would like to see a simple, well-developed cohesive treatise on low-flow and closed-system anesthesia that would speak to the unbelievers. This is not it. This is a collection of papers from the First International Symposium on Low Flow and Closed System Anesthesia, and therein lies its weaknesses. The content varies widely from cookbook descriptions of technique to beautifully developed mathematical treatment of uptake and distribution. Style varies from clear exposition to this example of the opaque: "The in-circuit fall of oxygen concentration is the reverse mirror image of that N_2O that is increased." Some papers are reports of research in the field, some are reviews. Not all are directly or exclusively concerned with low-flow anesthesia. Papers are grouped under five headings: Uptake and Distribution, Clinically Applicable Techniques and Cost, Special Procedures and Variations, Equipment and Measurement Techniques, and Ecology and Liability. There is considerable overlap and repetition; almost every other author feels the need to restate the advantages of low-flow and closed-system anesthesia. There is no real development or flow to the text, so that the reader meets towards the end of the book information he has already received at the beginning. An index that contains the heading "halothane" followed by a list of 55 page numbers is of little value in locating specific information. There are, however, few errors or misprints, with the glaring exception of a dangerous transposition on page 75 of the flows of N_2O and O_2 suggested by Virtue. Those criticisms aside, the book does contain everything one would wish to know of the art and science of low-flow anesthesia. In particular, "The Anesthetic Continuum" by Dr. Lowe is a clear and excellent review, as are discussions of the Bain circuit, mass spectrometry, chronic exposure, and nitrous oxide pollution in dentistry. For the knowledgeable and interested, this is an up-to-date compendium, but I doubt that it will attract the general or casual reader.

A. RODERICK FORBES, M.B., B.S.
University of California, San Francisco
Department of Anesthesia
Veterans Administration Hospital
42nd Avenue and Clement
San Francisco, California 94121