understand the sensitivity of the Doppler for detecting venous embolism.

In dealing with intracranial pressure reduction, no mention is made of furosemide or the measurement of serum osmolality as a guide to osmotherapy, nor is there adequate discussion of airway management and ventilation in severe head injury, high spinal-cord injury, or coma.

Notwithstanding these criticisms, this book should stimulate the


to think in terms of the underlying mechanisms involved, and provides generally good guidelines for patient care.

Maurice S. Albin, M.D., M.S.
Department of Anesthesiology and Neurological Surgery
Presbyterian-University Hospital
230 Eith St., Pittsburgh, Pennsylvania 15213

---

Reviews of Audiovisual Aids


This tape-slide teaching sequence consists of a 21-minute lecture on cassette tape, a carousel of 72 accompanying slides, and a booklet of text and questions. It is directed to medical students, and describes the standard evaluation of adequacy of ventilation, and ventilatory reserve. Its topic is the variables to be measured in patients in respiratory failure. It does not deal with the anesthetized patient. Perhaps the foremost virtue is the emphasis on quantification of respiratory variables as guides to the treatment of patients in respiratory failure.

Three basic principles are described: the utility of measurement of alveolar-to-arterial oxygen tension differences, quantification of dead space-to-tidal volume differences, and the importance of ventilatory reserve as measured by vital capacity and respiratory force.

The author describes the several etiologies of hypoxia, goes on to the alveolar air equation, and quantifies shunt fraction by the method of taking 5 per cent of the alveolar-to-arterial oxygen tension difference. An error in the slides of the alveolar air equation is confusing. $P_{A0}$ being repeatedly written as $P_{Ang}$. Less forgivable is the author’s failure to describe the limitations of the simplified shunt approximation. Although the example given is appropriate with a $P_{A0}$ greater than 150 torr, one is left with the impression that the method has no inherent limitations. The shunt equation is neither mentioned nor described. Quantification of the dead space-to-tidal volume ratio and measurement of ventilatory reserve fare better, and the author suggests reasonable though arbitrary limitations for the three variables in deciding when a patient needs ventilatory support.

It is clear that this teaching tool is directed at a very naive audience, presumably medical students. Indeed, it may be at too superficial a level for students who have completed a course in cardiopulmonary physiology. It is, however, clear and direct, and successfully introduces a complex and clinically important topic.

As an audiovisual presentation, it is not optimally done. The slides, although colorful and clear, do not complement the text. Rather, they repeat visually what has been stated in the tape. At an average rate of slightly more than three per minute, the number of slides is too great, and their informational content too low. Perhaps most frustrating is the fact that there is no indication in the tape on when to advance the slides, requiring the student to guess. This is not only confusing but distracting.

In summary, an important topic is addressed, the relevant variables are discussed, and their application is appropriate. The presentation suffers from a few inaccuracies, oversimplifications, and less than optimal audiovisual techniques.

Peter M. Winter, M.D.
Department of Anesthesiology
BB 1415C Health Sciences RN-10
University of Washington
Seattle, Washington 98195


Since I have never reviewed an audiovisual program before, I have chosen my own organizational format, commenting first on the slides alone, then on the audio portion of the program, and then on how the two fit together addressing two areas, quality and content.

Slides: In general, the slides are well done. The information presented is clear, colorful, and visually appealing. Several questions came to mind while viewing the slides alone without listening to the tape, but these questions were usually answered when the audio portion and slides were reviewed simultaneously. The quality of a few slides could be improved. For example, the printing on the slides showing answers to the self-evaluation questions was small, and could occupy more area of the slide. Several slides either omitted important concepts or failed to illustrate them clearly. In slide 18, the intent is to show a happy, awake mother undergoing cesarean section with regional anesthesia. The mother is not receiving an increased $P_{A0}$. Many obstetric anesthesiologists now feel that the parturient should receive a high inspired oxygen concentration to improve fetal oxygenation even during elective cesarean section. Slide 19 shows a neonate in a bassinet, but one cannot see the head of the baby. An assistant is standing by the side of the bassinet with a stethoscope around his neck but is not listening to the neonate, as he should be. A gloved resuscitator holds a self-inflating bag intended for positive-pressure ventilation. But the infant obviously has good motor tone, evidenced by prominent flexion of the lower extremities. Therefore, the infant appears normal and vigorous, while the individuals standing around the neonate appear poised to conduct serious resuscitative efforts. The “staged” nature of the slide would be evident to an individual familiar with neonatal resuscitation. Slide 29 deals with prevention and treatment of hypotension associated with regional anesthesia for cesarean section. The slide appropriately illustrates monitoring maternal blood pressure, administering fluids, and having anephrine readily available to treat hypotension should it occur. However, proper positioning of the mother, an essential step in the prevention and treatment of hypotension associated with regional anesthesia in obstetrics, is omitted. Slide 30 suggests a caudal or lumbar epidural injection of saline solution to treat postspinal headache, but does not include the more recent therapeutic modality of epidural blood patch. Slide 31 suggests that the spinal anesthetic level does not extend higher than the sixth thoracic dermatome, maternal blood pressure will be maintained, while if the level is below T6, the mother will experience pain. This is an oversimplification, to say the least.

Audio: Many of the authors’ recommendations for managing regional anesthesia for cesarean section are both timely and appropriate. For example, the avoidance of standard premedication, the administration of atropine to any woman undergoing cesarean section, the importance of relative hypovolemia in contributing to maternal hypotension, and the therapy of hypo-
tension with small doses of ephedrine. However, I would take issue with several statements that the authors make. For example, they imply that subarachnoid anesthesia is "simple." They further imply that a disadvantage of continuous epidural anesthesia is an increased infection rate associated with epidural catheters, I am not aware of any substantive data that support this thesis. The incidence of epidural abscess with either continuous or single-shot lumbar epidural techniques is extremely low. Again, in discussing hypertension, no mention is made of maternal position or left uterine displacement in the prevention or treatment of hypotension associated with sympathetic blockade. For cesarean section with general anesthesia, they recommend a rapid induction technique utilizing pre-oxygenation, a pre-intubation dose of d-tubocurarine and 250 mg of a rapidly-acting barbiturate, such as thiopental. No mention is made of cricoid pressure to minimize the risk of passive regurgitation and possible aspiration. In addition, 65 per cent nitrous oxide is recommended for maintenance of anesthesia. Evidence now exists that the concentration of nitrous oxide should not exceed 50 per cent (maternal, Fio2, 50 per cent) for optimal fetal and neonatal well-being. They mention that potent halogenated anesthetics, such as halothane, are seldom indicated for cesarean section. However, they omit evidence that low doses of halothane, enfurane, or methoxyflurane (1 MAC or less) in combination with 50 to 100 per cent oxygen improve neonatal outcome and minimize the risk of maternal awareness prior to birth of the baby. Many clinical studies show that low concentrations of halogenated anesthetics administered prior to birth of the baby are safe, and do not cause increased maternal bleeding. Advantages accrue to the infant as well when high concentrations of oxygen are administered to the mother. In reference to the postpartum use of oxytocics, the authors mention that oxytocin often decreases maternal blood pressure and causes "short runs of arrhythmias." The latter statement is vague.

In summary, the slide and tape presentation Obstetrical Anesthesia: Cesarean Section represents a well-intentioned and well-conducted effort. Nevertheless, it suffers from several omissions, primarily because much of the material is out-of-date. Several oversimplifications are made unnecessarily. The slides are well done technically; they are visually appealing and effectively convey the intended message. The authors fail to mention the crucial role of proper left uterine displacement in preventing and treating maternal hypotension, so frequently encountered in major conduction anesthesia for cesarean section. The slide-tape program also omits more recent data on the neonatal benefits of high maternal oxygen concentrations, and the potential benefits of low-dose halogenated anesthetics prior to delivery.

DAVID H. RALSTON, M.D.
Department of Anesthesiology
RR 4488 Health Sciences RN-10
University of Washington
Seattle, Washington 98195

Books Received

<table>
<thead>
<tr>
<th>Title &amp; Edition</th>
<th>Author/Editor</th>
<th>Publisher</th>
<th>Address, Name, Year</th>
<th>Pages</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulmonary Emergencies</td>
<td>J. B. Berté</td>
<td>Philadelphia</td>
<td>J. B. Lippincott</td>
<td>1977</td>
<td>$15.00</td>
</tr>
</tbody>
</table>

Workable outlines of management.

|-------------------------------------------|--------------|-----------|-------------|-------|-------|
| Diagnostic and developmental electroencephalography for neuborns, prematures, well and ill infants.

|--------------|--------------|-----------|-------------|-------|-------|

History, incidence, pathogenesis and prenatal diagnosis.

<table>
<thead>
<tr>
<th>Cancer Invasion and Metastasis: Biologic Mechanisms and Therapy, Volume 5</th>
<th>S. B. Day</th>
<th>New York</th>
<th>Raven Press</th>
<th>1977</th>
<th>$35.00</th>
</tr>
</thead>
</table>

Progress in cancer research and therapy.