

The YEAR BOOK of **Anesthesia** 1980

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1980
YEAR BOOK OF
ANESTHESIA

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Dedication

The editors wish to dedicate the 1980 YEAR BOOK OF ANESTHESIA to the memory of Stuart C. Cullen, M.D., who died August 11, 1979, at his home in Belvedere, California. For many years, Doctor Cullen was a leader among international anesthesiologists as a scientist, clinician, teacher, administrator and author.

We quote from the 1970 YEAR BOOK OF ANESTHESIA:

"After many years of service as the editor of a section in the YEAR BOOK OF SURGERY and then the first editor of the newly formed (1963) YEAR BOOK OF ANESTHESIA, Stuart C. Cullen has relinquished his position. He has, in the last few years, retired from an impressive series of educational positions which have included an editorship of the journal ANESTHESIOLOGY, a Directorship of the American Board of Anesthesiology, a Chairmanship of a Department of Anesthesiology and most recently the Deanship of a Medical School. Few men in our specialty have contributed so much to medical education in so many ways, and your new editor feels very humble in picking up this editorship where Stu Cullen has left off."

Along with a host of Cullen-trained anesthesiologists, associates, friends and his family, we mourn his passing and treasure his friendship and contributions to mankind.

THE EDITORS

Current Literature Quiz

The significant advances described in this YEAR BOOK introduce new diagnostic and therapeutic procedures useful for treating conditions seen frequently in your practice. The following questionnaire will test your familiarity with the current literature. The correct answers are given in the back of the book.

1. What is the effect of physostigmine in a patient with unconsciousness induced by diazepam or by ketamine or in a patient with confusion induced by cimetidine? Explain the implications of this information.
2. List adverse reactions seen in patients treated with β -receptor blocking drugs. What adverse effects can be seen in pregnant patients on β -blockers?
3. Discuss the use of cimetidine to control gastrointestinal bleeding in patients with azotemia and in those with kidney transplants and immunosuppressive therapy.
4. What dose of dantrolene sodium should be used to treat a patient with a developing syndrome of malignant hyperpyrexia? How should he be managed for a subsequent operation?
5. List those drugs that may produce postoperative respiratory depression and discuss the mechanisms by which this occurs for each drug.
6. Explain the pharmacologic mechanisms responsible for the elevation in heart rate, cardiac output and blood pressure seen with pancuronium and gallamine. What difference is to be found between these two drugs in their autonomic mechanisms?
7. Explain why the reversal effect of neostigmine is more prolonged than is its half-life of distribution.
8. How can postoperative hypertension be best controlled in a patient who has had cardiopulmonary bypass?
9. What is the best current approach to management of a patient
10. What is the role of altered ionized calcium levels in hypovolemic shock?
11. What is the relationship of the endogenous opioid system to pain threshold and to pain tolerance levels?

12. Why is sciatic stretch and manipulation of the back not advised during epidural steroid treatment?
13. Describe the medical management of chronic cancer pain. Why is psychological assessment important?
14. What is the piriformis syndrome and how is it diagnosed and treated?
15. What are the implications of nitrous oxide-stimulated motor activity? How does this relate to the endogenous opioid system?
16. Discuss the prophylactic use of lidocaine in acute myocardial infarction patients.
17. There has been much recent discussion regarding methods to minimize the incidence and seriousness of aspiration pneumonia. Discuss some of these methods and their reputed advantages and disadvantages.
18. Discuss the advantages and disadvantages for the use of epidural anesthesia for pain relief in the parturient with a breech presentation.
19. Discuss the evidence supporting the view that effective pain relief for the mother in labor can benefit the fetus/neonate.
20. Is there a preferred anesthetic technique for elective uncomplicated cesarean section?
21. What is "amnesic wakefulness"?
22. Discuss the apparent advantages and disadvantages of continuous infusion lumbar epidural anesthesia for pain relief during labor.
23. How may cigarette smoking or its abstinence affect oxygen delivery to the fetus in the immediate prenatal period?
24. What is the *immediate* effect of intermittent positive-pressure breathing on arterial oxygenation in patients who have had thoracotomies or upper abdominal operations?
25. Name four physiologic mechanisms causing pulmonary edema.
26. How long should clonidine therapy be discontinued before elective surgery?
27. What is the incidence of pulmonary trauma (pneumothorax, pneumomediastinum or subcutaneous emphysema) in patients receiving positive-pressure ventilation?
28. What objective criteria may be used to determine when a patient may be weaned from a ventilator after cardiac surgery?
29. How does the prone position affect regional ventilation and perfusion in awake and anesthetized-paralyzed patients?
30. How does the respiratory system compensate for metabolic acid-base abnormalities?
31. In general, which surgical procedures *do not* require that blood be routinely cross-matched prior to surgery?

32. How does the buffer response to an acute rise in PCO_2 differ in vivo and in vitro?
33. What is the hypoxic pulmonary vasoconstrictor response?
34. What acid-base abnormalities occur during salicylate intoxication?
35. What effect do chronic renal failure and hemodialysis have on pulmonary function?
36. After cord transection, how long does the vascular instability seen in the erect position persist?
37. What leads to brain damage after serious hypotension?
38. Describe the classic muscle changes of malignant hyperthermia.
39. What are the harmful effects that may follow the use of albumin in the treatment of hypovolemic shock?
40. Does malignant hyperthermia result each time a susceptible person is anesthetized?
41. What are the conditions that predispose to tracheal collapse after thyroidectomy?
42. Are there any data correlating tracheostomy with contamination of central venous catheters?
43. What correlation exists between catecholamine levels and pulmonary insufficiency in patients in septic shock?
44. What agent is preferable in controlling hypertensive crises during resection of pheochromocytoma?
45. Is endtidal PCO_2 or pulmonary artery pressure of any value in assessing or treating shock?
46. Are there ever any indications for the concomitant use of vasopressin and nitroprusside?
47. Under what circumstances may carotid sinus denervation lead to hypertension postoperatively?
48. Is there a relationship between lacticemia levels and the successful outcome in treatment of shock?
49. Is there an anesthetic hazard in patients given bleomycin preoperatively for cancer therapy?
50. Is the use of explosive anesthetic agents justified today?
51. Is chronic exposure to the operating room environment a health hazard? Is this controversial?
52. What are some advantages of low-flow or closed-circuit anesthesia?
53. Does the American Society of Anesthesiologists' physical status classification system need to be revised?
54. Does exposure to low levels of nitrous oxide affect memory?
55. Does fentanyl alter the myocardial response to ischemia? How?
56. What are the consequences of chronic abuse (inhalation) of methoxyflurane?

57. Are anticholinergic drugs necessary for preanesthetic medication? Why?
58. Do inhalation anesthetics cause cancer?
59. Are smokers likely to have a decreased threshold for ventricular fibrillation? Why?
60. With the usual doses to provide anesthesia by the route selected, will plasma lidocaine levels at 15 minutes be higher after epidural or after intrathecal injection?
61. Are some local anesthetics more cardiotoxic than others? Can this difference in toxicity be related to a physical-chemical property?
62. Do oxygen electrodes respond only to oxygen? If not, what other physiologic or pharmacologic substances may they respond to?
63. Are you trained in cardiopulmonary resuscitation (CPR)? How recently? Should all anesthesiologists be trained in CPR? Can a patient be sustained for 1 hour by CPR and survive?
64. What energy level would you use to defibrillate an adult (joules/kg)? Is the use of excessive energy hazardous?