

A 1966 Anesthetic Administered by Robert D. Dripps, M.D., Demonstrated His Experimental Style of Clinical Care

Robert E. Johnstone, M.D., Lee A. Fleisher, M.D.

ABSTRACT

Robert D. Dripps, M.D. (1911 to 1973), helped found academic anesthesiology. Newly reviewed teaching slides from the University of Pennsylvania (Philadelphia, Pennsylvania) contain six anesthesia records from 1965 to 1967 that involved Dripps. They illustrate the clinical philosophy he taught—to consider administration of each anesthetic a research study. Intense public criticism in 1967 for improper experimentation on patients during anesthesia changed his clinical and research philosophies and teaching. (**ANESTHESIOLOGY 2016; 124:1218-21**)

ROBERT D. Dripps, M.D. (1911 to 1973), served as the first chairman of the Department of Anesthesia at the University of Pennsylvania from 1943 until 1973.¹ He was instrumental in transitioning the department from a division of the Department of Surgery to a separate department. Recognized as a founder of academic anesthesiology, at the time of his death he had trained an estimated 15% of the faculty and chairs in US academic anesthesiology departments.¹ Widely lauded during his career, Dripps was particularly recognized for advancing the practice of spinal anesthesia through long-term follow-up studies that documented its safety² and for a philosophy of practice that considered administration of every patient anesthetic a clinical experiment.³

Dripps graduated from the University of Pennsylvania Medical School (Philadelphia, Pennsylvania) in 1936, where he did postgraduate work in pharmacology. Recognizing a need for specialized physician anesthesia care, the Pennsylvania Surgery Department sent him in 1941 to the University of Wisconsin (Madison, Wisconsin) to work with Ralph Waters (1883 to 1979), who had founded the first academic anesthesia teaching center in a university medical school. After 6 months, Dripps returned to Pennsylvania, where he started a residency program and recruited and trained many talented physicians. He authored more than 100 papers and contributed to numerous prestigious textbooks. He served as president of the Association of University Anesthetists, The Halsted Society, and the American Board of Anesthesiology. He chaired committees at the National Institutes of Health, World Health Organization, and National Academy of Sciences. In 1965, the American Society of Anesthesiologists gave Dripps its Distinguished Service Award.

One controversy that marred Dripps' career involved public criticism by several prominent anesthesiologists in 1967 for

a study he coauthored that they deemed dangerous and lacked proper patient consents.⁴⁻⁶ This study involved infusing epinephrine into nine normal female patients during general anesthesia for elective surgical operations to find a dose that caused a ventricular arrhythmia and to determine if dehydrobenzperidol increased the dose of epinephrine needed to cause the arrhythmia. Dripps defended the study and his actions, noting that patient consent was difficult and that the investigators had “accepted the role of guarantor of the patient's rights and safety.” He wrote, “I would have conducted this... study on one of my children.”⁵ This controversy, however, changed his thoughts and writings about patient consent.

Dripps worked clinically while he was the department chair, teaching residents and occasionally administering anesthetics himself to prominent patients. Newly reviewed teaching slides from his department include six anesthetics from 1965 through 1967 that involved Dripps—five as a faculty supervisor and one from 1966 that he personally administered. These anesthetics were done shortly before and during the time of the criticism and his response to the study, and these records illustrate his clinical style.

Copies of Anesthesia Records

Harvey Cushing (1869 to 1939, Harvard Medical School) introduced the routine use of anesthetic records in a paper format in 1895. Presentations of anesthesia records at professional conferences generally employed arc light projections of photographs of the records made on glass or transparent materials—known as lantern slides—until the 1960s, when 35-mm slides became widely available. By 1970, most teaching departments had abandoned lantern slides for 35-mm

This article is featured in “This Month in Anesthesiology,” page 1A. Corresponding article on page 1208. This article has an audio podcast. Figures 1 and 2 were enhanced by Annemarie B. Johnson, C.M.I., Medical Illustrator, Vivo Visuals, Winston-Salem, North Carolina.

Submitted for publication December 25, 2015. Accepted for publication February 22, 2016. From the Department of Anesthesiology, West Virginia University, Morgantown, West Virginia (R.E.J.); and Department of Anesthesiology and Critical Care, University of Pennsylvania, Philadelphia, Pennsylvania (L.A.F.).

Copyright © 2016, the American Society of Anesthesiologists, Inc. Wolters Kluwer Health, Inc. All Rights Reserved. Anesthesiology 2016; 124:1218-21

slides. When Dripps left his department chairman position in 1973 for a university administrative position, a box of 111 lantern slides used for various lectures was abandoned and given to one of the authors (R.E.J.). The slides were stored and unexamined until a recent review revealed copies of six anesthetics involving Dripps, including a personally administered one.

Ninety-one of the lantern slides contained departmental anesthesia records of challenging cases, *e.g.*, excision of a pheochromocytoma, or of cases with complications, *e.g.*, severe hypotension. The remaining slides were primarily electrocardiographic tracings, a new intraoperative monitoring modality in the 1960s. All the slides were numbered and labeled with an ink pen, *e.g.*, “89 BP0020↓: Cyclo: Etiol” (BP indicates blood pressure). Although the handwriting on the slides appears similar to that in the personally administered Dripps anesthetic record, no clear record exists of who made, annotated, kept, or used the slides. They were shown occasionally during department conferences and viewed by department members (author recollection: R.E.J.). Some notations are difficult to see without extra lighting and difficult to discern due to handwriting and slide quality.

Dripps Anesthetic

In November 1966, Dripps personally administered a spinal anesthetic for a gastric polypectomy and

cholecystectomy, performed by the chair of the Department of Surgery (fig. 1). The anesthetic record was found on a lantern slide labeled, “47 Gallbladder under Spinal.” The slide appears to be made from a carbon copy of the anesthesia record, a copy kept by the anesthesiology department while the top copy went in a patient chart. Parts of the lantern slide record are overwritten in the original handwriting, probably to facilitate the making of the slide. Some parts of the record not overwritten are difficult to read and interpret.

The patient in this November 1966 anesthetic was a 59-yr-old woman, assessed as physical status 2. On the anesthesia record on a line labeled “Oper Perm,” Dripps wrote, “self,” which from the examination of other anesthesia records probably indicates that the patient had signed a form consenting to surgery. For premedication, the patient received 100 mg secobarbital, 50 mg hydroxyzine, and 0.4 mg atropine. For the anesthetic, Dripps injected 16 mg tetracaine subarachnoid at L3 to L4 and then 2 ml Innovar (a mixture of 2.5 mg droperidol and 50 µg fentanyl/ml; Janssen Pharmaceuticals, USA) intravenously, noting on the record “not sleeping.” He next administered 75 mg thiopental. When the blood pressure subsequently dropped from 145/100 to 85/60 mmHg, he administered 50 mg ephedrine intramuscularly and speeded up the intravenous infusion and then when the blood pressure increased to

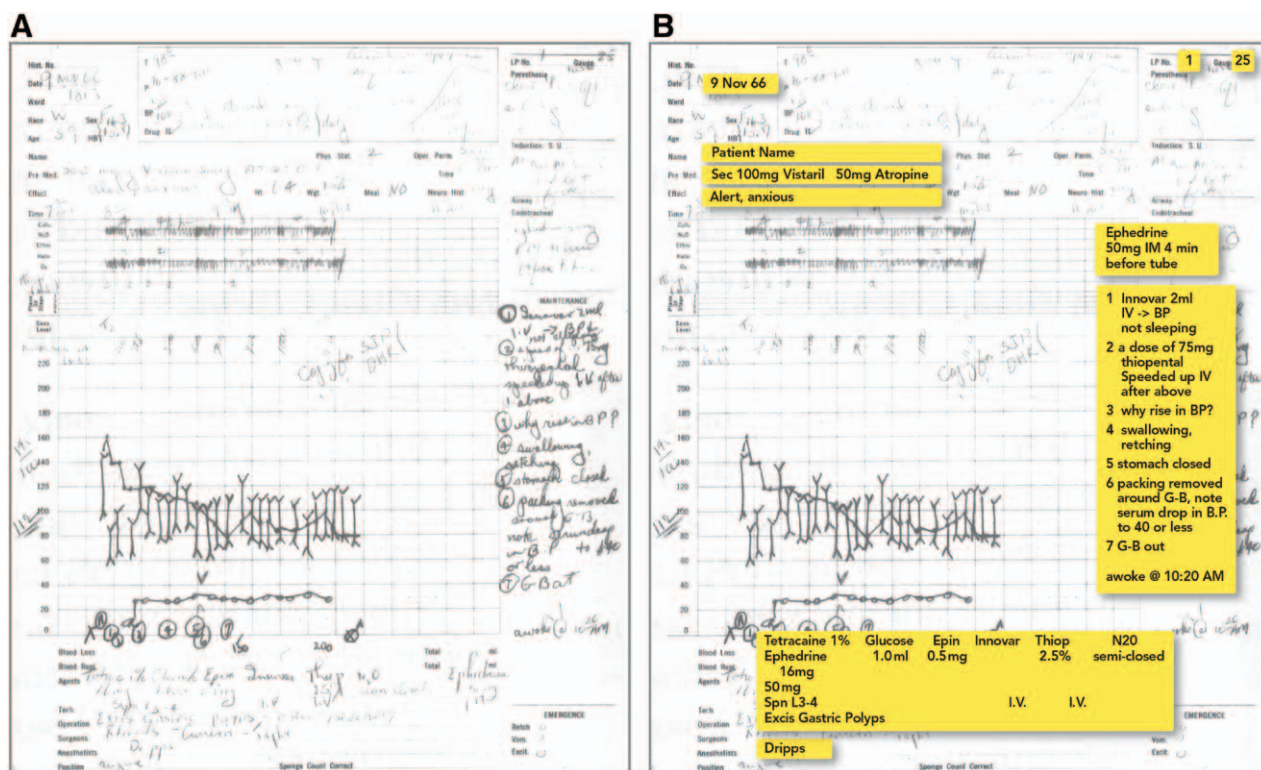


Fig. 1. (A) 1966 anesthesia record of Robert Dripps, M.D., on a department lantern slide. Overwriting was presumably done by Dripps for improving visibility when making the slide. Parts of the record are not clearly interpretable. Patient name has been covered by authors for ensuring privacy of the patient. (B) Same 1966 anesthesia record, with some handwritten notations typed on the record.

135/100 mmHg, he noted on the record, “why rise in BP?” He also administered nitrous oxide and oxygen, apparently by facemask, at the rates of 4 and 2 l/min, respectively. Midway through the anesthetic, he noted that the patient was “swallowing, retching.” Another notation reads, “Packing removed around GB [gallbladder] note serum \downarrow in BP to 40 or less,” which accompanied a blood pressure charted at approximately 40/25 mmHg as an apparent explanation for the hypotension. The patient received 1,100 ml intravenous fluids during the 2-h surgery. Blood loss was recorded as 200 ml. Final blood pressure was approximately 110/70 mmHg. Final notations include “awoke” and zeros in the emergence section for vomiting, retching, and excitement.

The record of another spinal anesthetic supervised by Dripps in 1965 (fig. 2) was found on a lantern slide labeled, “6 Hypotension – Spinal – TUR [transurethral resection].” The anesthetic record shows hypotension after the initiation of a spinal anesthetic and contains the notation, “cold, clammy, cyanotic – syncope prob to spa? This did not respond to increased fluids i.v. so shift to neosynephrine drip 10 mg/500 ml.” “prob to spa” undoubtedly means “probably due to the spinal anesthetic” and illustrates the routine charting of suspected causes for unusual occurrences during anesthetics that Dripps taught. The final entry states, “note no unusual occurrences after initial episode.” This supervised anesthetic record is presented because the handwriting is readable and contains the research-style comments that Dripps favored. The records of other anesthetics in which Dripps was involved contain similar comments concerning the course of the anesthetic.

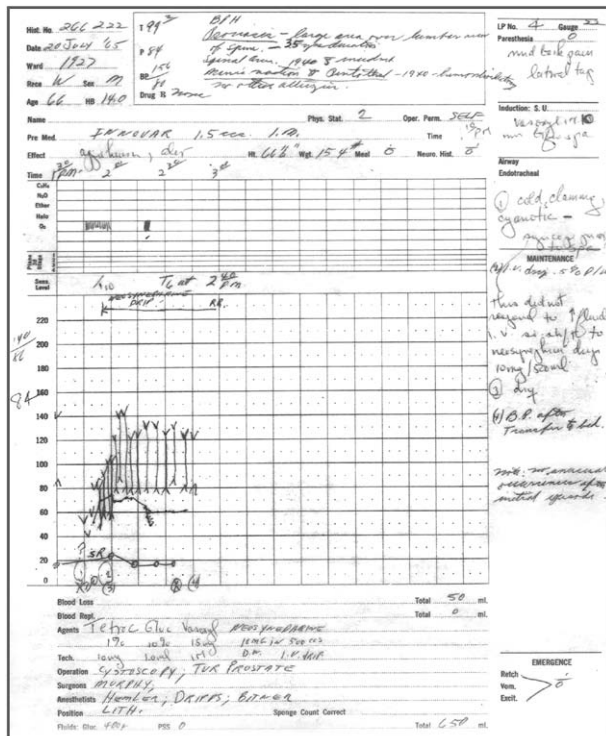


Fig. 2. 1965 anesthesia record in which Dripps served as supervising faculty.

Discussion

In 1964, Dripps wrote, “Each administration of an anesthetic is an experiment. The patient’s reaction cannot be known in advance. The clinician experiments, in the best sense of the word, with drug, dosage and technique.... He keeps a record of the experiment and can, if he wishes, analyze the results.... The opportunity is there for the dedicated.... I ask for more of a research attitude in the practice of the specialty of anesthesiology.”³ The 1961 edition of his popular textbook, *Introduction to Anesthesia*, contains the advice, “Inform the patient of the plans for anesthesia.... Chose the best anesthetic for the patient bearing in mind the capabilities and preferences of anesthetist and surgeon.... The patient’s relatives may be troublesome in the efforts to help plan for their kin’s welfare. They can be gently sidetracked.”⁷

The anesthetic that Dripps administered in November 1966 occurred after the controversial study was accepted for publication in July 1966 and before its publication in March 1967.⁴ This illustrates the experimental style of clinical anesthesia that Dripps promoted, seeing what was possible and questioning the responses. In 1966, using spinal anesthesia for gastric and biliary surgery in a patient breathing nitrous oxide without airway protection was an unusual technique. The intraoperative notations made by Dripps illustrate his research attitude, even in a private patient.

In the controversial study, Dripps and coworkers⁴ wrote, “We believe that an informed consent cannot be obtained for a study of this type.... Instead we have accepted the role of guarantor of the patient’s rights and safety.” Criticisms of this statement and the study were strong and direct. B. Raymond Fink (1914 to 2000, University of Washington, Seattle, Washington) wrote, “Investigators, however conscientious, do not have the right to infringe the prerogative of the subject to exercise informed consent.”⁵ Henry Beecher⁶ (1904 to 1976, Harvard Medical School, Boston, Massachusetts) agreed that “informed consent is a goal toward which we must strive for ethical, sociological and legal reasons. This is not an empty gesture.” Beecher labeled the research view of Dripps as “paternalistic.”

It is important to recognize that the Declaration of Helsinki was established in 1964 to regulate international research involving human subjects.⁸ Therefore, this was a relatively new and evolving concept at the time of the controversial study and these clinical anesthetics. Albert Schweitzer (1875 to 1965, Medical Missionary Gabon, West Africa), the Nobel Peace Prize laureate in 1952 and a revered physician role model of the 1950s and 1960s, was criticized for his paternalistic style of practice even while he expressed a “reverence for life.”⁹

After the criticisms of his 1967 study, Dripps appears to have changed his thoughts about research and the rights of patients. In 1971, he wrote an essay on the ethical, practical, and legal problems with human studies, in which he cited the Declaration of Helsinki and described in detail a robust method he was then using for obtaining informed

consents.¹⁰ He referenced and supported the ethical positions of Beecher, his foremost critic. In his 1971 Rovenstine lecture, Dripps professed, “We seem to forget that every man, regardless of his station in life, regardless of racial origin...is worthy of respect, as befits the essential dignity of men.”¹¹

No records of anesthetics administered by Dripps after 1967 are available for review. The record of the 1966 anesthetic shown in this article is consistent with the clinical style that led to a productive academic career and the development of modern anesthesia. It demonstrates an approach to advancing anesthetic knowledge before the time of clinical trials, but that resulted in ethical criticisms and caused Dripps to change his core philosophies and teachings. The patient consent forms that Dripps developed and promoted in 1971¹⁰ are consistent with his continued leadership in the specialty.

Acknowledgments

Support was provided solely from institutional and/or departmental sources.

Competing Interests

Dr. Johnstone is a trustee for the Wood Library-Museum of Anesthesiology, Schaumburg, Illinois, from which he receives expense reimbursements, and he receives compensation from *Anesthesiology News* for commentaries, which include history topics. Dr. Fleisher declares no competing interests.

Correspondence

Address correspondence to Dr. Johnstone: Department of Anesthesiology, West Virginia University School of Medicine, 1 Medical Center Drive, PO Box 8255, Morgantown, West Virginia 26506. johnstoner@wvuhealthcare.com. This article may be accessed for personal use at no charge through the Journal Web site, www.anesthesiology.org.

References

1. Wollman H: Robert Dunning Dripps. 1911-1973. *ANESTHESIOLOGY* 1974; 40:114-5
2. Dripps RD, Vandam LD: Long-term follow-up of patients who received 10,098 spinal anesthetics: Failure to discover major neurological sequelae. *J Am Med Assoc* 1954; 156:1486-91
3. Dripps RD: Research: The environment for maximal development. *ANESTHESIOLOGY* 1964; 25:440-4
4. Long G, Dripps RD, Price HL: Measurement of anti-arrhythmic potency of drugs in man: Effects of dehydrobenzperidol. *ANESTHESIOLOGY* 1967; 28:318-23
5. Fink BR, Dripps RD: Patient consent. *ANESTHESIOLOGY* 1967; 28:1109-10
6. Beecher HK: More on patient consent. *ANESTHESIOLOGY* 1968; 29:602-3
7. *Introduction to Anesthesia*, 2nd edition. Edited by RD Dripps, JE Eckenhoff, LD Vandam. Philadelphia, WB Saunders, 1961
8. World Medical Organization. Declaration of Helsinki. *Brit Med J* 1996;313:1448-9
9. Gunther J. *Inside Africa*. New York, Harper, 1955.
10. Wollman H, Dripps RD: Physiologic and pharmacologic studies in human volunteers. *ANESTHESIOLOGY* 1971; 35:168-75
11. Dripps RD: The physician and society. E.A. Rovenstine Memorial Lecture. *ANESTHESIOLOGY* 1971; 34:163-9