tory movements—pressure phenomenon, anesthesia effect, etc. We have nothing to add except to say that minus the effect of uterine contractions inhalation anesthesia has a tendency to irritate the respiratory mucous membranes of an intrauterine infant with formation of excessive mucus which may block whole areas of alveoli and gradually cause massive atelectasis incompatible with life. It is obvious, therefore, that the ideal anesthesia for cesarean section is one which gives the anesthesia entirely to the mother and none to the infant. Those who advocate local anesthesia alone for the operation were very much on the right track. . . . Spinal anesthesia also offsets the effect of inhalation anesthesia on the cesarean infant. However, for a long time the danger of one-shot injection into the spinal canal has been a hindrance to its use in the operation and several instances of sudden death on the table have occurred in various clinics. . . . With the development of the continuous spinal after the method of Lemmon our interest was revived. . . . We are considering in this paper continuous spinal after the method of Lemmon and we are convinced after ninety such anesthesias in cesarean operations under all kinds of circumstances that in expert hands this provides the ideal method of assuring safety to both mother and infant. . . . We believe that continuous spinal is the anesthetic of choice in cesarean section because: 1. The mother alone gets the anesthesia and the baby gets none. 2. One can withdraw the anesthetic if the patient should show signs of toxicity. 3. The abdominal muscles are relaxed. 4. The intestines are contracted. 5. The baby cries immediately after delivery from uterus. 6. Uterus contracts well after delivery of the child because the nerve control of the uterus, coming to it by means of vagus and sympathetic chain, is not blocked. Bleeding is thus minimal. We have now, over a period of four years, performed about ninety cesarean sections with continuous spinal. In these ninety cases we record 88 living children. Two cases only spoiled the record. Both these cases on autopsy had congenital heart lesions. One other child almost died. This child was an eight pound baby that suddenly turned cyanotic eight hours after delivery. The usual atelectatic stridor was absent and x-ray showed a collapsed lung from a congenital lung cyst. With O_2 inhalations, the lung expanded and the child recovered." 7 references.

J. C. M. C.

MALLINSON, F. B.: *Apparatus for Preparing Pentothal in Bulk.* Lancet 2: 473–474 (Oct. 7) 1944.

"The apparatus described here may be constructed from any suitable bottle obtainable from the dispensary (such as a 500 c.cm. 'Vacoliter,' 'Sterivac' or Woulfe's bottle) which has a rubber bung. The glass tube passing through the rubber bung of such a vessel was replaced by a wide-bore spinal needle complete with stilette. Into another hole in the bung was inserted a metal stop-cock. A short length of capillary-bore rubber tubing was attached to the lower end of the spinal needle so that its distal end reached to the bottom of the vessel. Into the distal end of the capillary tube was inserted a short piece cut from the shaft of the spinal needle to act as a sinker. The apparatus was then filled with 500 c.cm. of pyrogen-free distilled water and the whole sterilized in the autoclave. When the apparatus was required for use the bung was removed and 25 g. of pentothal added to the water. . . . When the stop-cock is open and the stilette withdrawn, the exact amount of pentothal required can be drawn up into a syr-

inge. A boiled syringe is used and with its needle is carefully cleansed by repeated aspiration of sterile water between each case. . . . The longest time a bulk solution has been in use is 16 days. In this time no loss of potency has been observed, and only the faintest cloudiness has appeared in the solution. All the anaesthesias conducted with the solution have been satisfactory at the time and postoperatively. A sample of the solution left over after 16 days remained sterile after a week's incubation. . . . Washings of sterile water from a syringe used for the whole of a morning session in the theatre gave no growth of pathogenic organisms on 14 days' incubation."

J. C. M. C.

KENNEDY, R. L.: *Pentothal Sodium Anesthesia.* J. M. A. Georgia **33**: 327–330 (Nov.) 1944.

"During the past three years we have employed the intermittent intravenous administration of pentothal sodium for anesthesia in more than 4,000 operations. These operations have consisted of both minor and major procedures and the period of anesthesia has varied from five minutes to two and one-half hours. No deaths attributable to the anesthetic agent have occurred in this series. A 2.5 per cent solution of pentothal sodium is used. . . . Preoperative sedation is generally recommended and used prior to intravenous pentothal sodium anesthesia. It is our usual practice to administer one 1½ gr. nembutal capsule at bed time on the night preceding the operation. . . . The dose of nembutal is repeated on the morning of the operation one or two hours prior to the scheduled time of operation. One-half to one hour before transfer to the operating room a hypodermic injection is given of a solution containing morphine sulfate gr. ⅛ to ¼, atropine sulfate gr. $\frac{1}{150}$ and strychnine sulfate gr. $\frac{1}{60}$. . . . In addition to using pentothal sodium or pentothal sodium-oxygen as the sole anesthetic for minor and major surgery we have used pentothal sodium for induction of anesthesia to be maintained by ether and have found light pentothal sodium anesthesia a valuable supplement and complement to spinal anesthesia. We have also employed pentothal sodium administered rectally for basal anesthesia in children with excellent results."

J. C. M. C.

NARAT, J. K., AND GIRALDI, ERNEST: *Intravenous Anesthesia in Major Surgery: Use of One Per Cent Solution of Pentothal Sodium.* Am. J. Surg. n.s. **66**: 178–181 (Nov.) 1944.

"A critical analysis of intravenous anesthesia with the short-acting barbiturates shows that this method represents an outstanding advance in anesthesiology. . . . On account of variations in individual tolerance, the originally recommended injection of one calculated single dose was replaced by the intermittent mode of administration of fractional doses of a 5 per cent or 2½ per cent solution. However, three disadvantages of the intermittent method may be pointed out: First, clogging of the needle may occur since the solution is not flowing continuously. . . . Second, the intermittent mode of intravenous administration of an anesthetic may be compared with driving a car by stepping on the accelerator from time to time, instead of exerting a steady pressure on it. It is obvious that it is more difficult to maintain a uniform level of anesthesia with an intermittent method than it is with a continuous drip. Third, the anesthetist must manipulate the apparatus at frequent intervals while injecting the anesthetic solution and does not have both hands free for administration of oxygen, recording the