

the respiratory function. It is contra-indicated in inflammatory conditions of the neck complicated by edema of the glottis, and in tumors of the neck encroaching on the glottis and interfering with respiration. Children under seven or eight years of age, unless very robust, are poor subjects. . . . It is inadvisable to use this agent on patients suffering with respiratory embarrassment due to cardiac decompensation. I feel that it is contraindicated in the presence of bronchiectasis, severe anemia and shock. I also believe that pentothal is contraindicated in abdominal surgery when deep relaxation is important. Furthermore, cases of intestinal obstruction react poorly to pentothal sodium alone. Pentothal should be supplemented with block or spinal analgesia in this type of surgery. . . . The drug should be administered by a thoroughly-trained anesthetist who is competent to deal with any situation that may occur during the administration of this popular but potent drug." 1 reference.

J. C. M. C.

BRAY, LORNA: *Intravenous Anaesthesia*.
M. J. Australia 1: 46-49 (Jan. 15)
1944.

"All patients for intravenous anaesthesia are prepared as they would be for general anaesthesia. . . . Intravenous anaesthesia is contraindicated for the following subjects: (i) children who are less than ten years of age, because all the rapidly acting barbiturates used intravenously are respiratory depressants; (ii) patients with severe dyspnoea from pulmonary or cardiac disease. . . . As a rule a capsule of 'Seconal' (1.5 grains) is given the night before operation, and the dose is repeated in the morning one and a half hours before the patient goes to the operating theatre. This is followed one hour later by the injection of morphine (one-sixth of a grain) with atropine (one one-hundred and

twentieth of a grain) or hyoscine (one two-hundredth of a grain). . . . The method of administration here described is that for 'Pentothal Sodium.' . . . It is made up in ampoules of 0.5 and 1.0 gramme and is used in solutions of 2.5 per cent to 5 per cent strength. . . . As soon as the stage of muscular relaxation is reached, a metal airway is introduced and oxygen is run in slowly through a nasal catheter. The subsequent rate of injection and amount of anaesthetic agent used are now determined by the behaviour of the patient and by the ordinary signs which are used as a guide to the depth of anaesthesia—namely, the increase in depth of respiratory phase, the pupillary reactions, and the diminution or increase of muscular relaxation. If dyspnoea should appear in the course of the operation, the anaesthesia must be immediately discontinued. . . . The repeated dose method is the technique usually employed. . . . The single dose method has been infrequently employed by the writer. . . . It induces an anaesthesia of short duration with extremely deep narcosis, and produces low blood pressure and depressed respiration. . . . The continuous method is selected in the following circumstances: (i) in cases in which difficulties are likely to be encountered during prolonged anaesthesia; (ii) for debilitated patients, when it is desirable to cut down to a minimum the quantity of anaesthetic agent used. . . . Before the patient leaves the operating theatre the reflexes should be returning. . . .
"Used as a preliminary to inhalational anaesthesia, intravenous anaesthesia abolishes all knowledge of the operation. . . . When intravenous anaesthesia is employed as a supplement to spinal anaesthesia, great care must be exercised in its use. . . . In cases in which spinal anaesthesia has failed completely, it is not wise to use intravenous anaesthesia. But in borderline cases, in which the induction of the

spinal anaesthesia has taken a longer time than usual, and in which the extreme nervousness of the patient makes it undesirable to proceed with this form of anaesthesia alone, the addition of intravenous anaesthesia is recommended. At the end of a long operation, too, when the spinal anaesthesia is commencing to 'wear off,' intravenous anaesthesia is to be preferred to ether or nitrous oxide for supplementing the spinal anaesthesia. In such cases, the intravenous use of morphine and 'Omnopon' . . . will provide a supplementary general narcosis that will permit satisfactory completion of the operation. . . . This form of intravenous narcosis is contraindicated for patients over sixty years of age, because even a small dose produces mental confusion and impairs their chances of ultimate recovery. . . . In the series of cases here recorded there were no pulmonary complications, notwithstanding the fact that many of the patients were feeble and debilitated subjects and would be considered 'poor risks' for any form of anaesthesia. It is important, however, to mention that 'poor risks' required special care in regard to management and dosage; with these precautions they showed no ill effects or sequelae. . . . In this series of 700 cases there was one death. This can be attributed to faulty selection of the anaesthetic agent. . . . Intravenous anaesthesia should not be employed when good muscular relaxation is imperative, as the latter can be achieved only at the expense of grave risk to the patient." 2 references.

J. C. M. C.

EVANS, FRANKIS: *Continuous Intravenous Adrenaline in Spinal Anaesthesia; for the Control of Blood-pressure.* *Lancet* 1: 15-17 (Jan. 1) 1944.

"Many recommendations have been made for the control of blood-pressure

during spinal analgesia, but the pressor effects of the various drugs have been both transient and disappointing when used in conjunction with high spinal block. . . . Pitkin uses adrenaline mixed with a starch protein intramuscularly, and he claims excellent results with this method which liberates the adrenaline slowly over a long period. I thought, however, that adrenaline was best administered continuously in minute dosage during the time that it was most needed, and by a method that gave the anaesthetist complete control over so powerful a drug. Adrenaline in adequate dilution is eminently suited for intravenous injection because it is so rapidly oxidised in the body. . . . When adrenaline is administered intravenously by the drip method in suitable dilution the blood-pressure rises and the heart shows a compensatory slowing. The blood-pressure of a patient who has had a high spinal block may fall as low as 50 mm. Hg. If dilute adrenaline solution be dripped into a suitable vein the blood-pressure rises until the normal is reached. If the drip then be continued at the same rate the rise will continue to a very high figure (240 mm. Hg). On the other hand, if the drip be stopped the pressure will fall rapidly to its original low level. The adrenaline should be so regulated that the blood-pressure is maintained at a suitable level, so that the patient does not lose too much blood from hemorrhage, but is given an adequate circulation. Should the drip be suddenly greatly accelerated it is possible to cause cardiac irregularity. This however, is never seen if reasonable care is taken. . . . When this series of cases was first begun a solution of 1 in 500,000 adrenaline in normal saline was used, but it was found that the rate of drip required to maintain the blood-pressure was too fast. The strength of adrenaline now used is 1 in 250,000 in normal saline. This is easily ob-