

stand is clamped to the arm-rest or a table, if the leg is being used, and consists of an upright metal bar about 6 in. high, on top of which is a platform holding the metal clip from the box in which all Record syringes are supplied. The 20-cm. syringe rests in this, and is quite secure and out of the surgeon's way. The syringe here comes easily to the hand of the anaesthetist, who remains seated at the head. About 6 in. of narrow-bore thin-walled tubing runs from an adapter on the syringe to one arm of the three-way tap. Another arm carries the tubing from the drip bulb and bottle; a metal sinker holds the tubing in the reserve pentothal supply. . . . I aim at keeping the total dosage of that drug below 2 g. If the operation is likely to be long I always use  $N_2O + O_2$  to supplement and cut down the dosage of pentothal. . . . I consider operations of longer duration than  $1\frac{1}{2}$  hours generally to be unsuitable for pentothal, as are also those in which there is considerable surgical trauma and strong stimuli are evoked. . . . In my experience this form of anaesthesia is also unsuitable for abdominal explorations and for appendicectomies in robust individuals. . . . I have used intermittent pentothal with a saline or glucose drip for very long operations such as cholecystectomy, gastrectomy, anastomotic operations, and Gallie's herniorrhaphies performed under spinal analgesia." 4 references.

J. C. M. C.

DENNISON, W. M.: *Apparatus for Continuous Intravenous Anaesthesia*. Brit. M. J. 2: 437 (Sept. 30) 1944.

"A three-legged douche-stand on wheels forms a secure and mobile base for the apparatus. To one of the four uprights a wooden panel is clamped. This panel carries the saline and pentothal containers, fine-adjustment screws, and a double-drip bulb. The

saline container is the standard 500-cm. glucose-saline-giving bottle, held in position by a shoulder collar and a strong spring clip. The anaesthetic solution is carried in the barrel of a 20-cm. syringe fitted with a rubber stopper perforated to carry a glass tube with filter wool. The double drip is formed from the filter from a Horrocks infusion set, the doubly perforated flanged bung from a transfusion set, and two short pieces of glass tubing drawn to a fine point. The anaesthetic container and the drip bulb are held in position by the clips on the clip rack from a 20-cm. Record syringe case. Both clip racks are permanently fixed to the base-board. Fine-bore rubber tubing is used throughout, and the needle (Wassermann size) is attached to a glass vein-seeker. . . . The arm is splinted in the usual fashion and a sphygmomanometer cuff is employed to render the veins prominent. The saline flows continuously at 40 to 60 drops a minute, and the anaesthetist need only give a light touch with two fingers to turn off the pentothal. The intravenous anaesthesia is combined with light gas-and-oxygen when required."

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ROBERTS, F. W.: *An Introduction to Intravenous Anaesthesia*. Clin. J. 73: 179-182 (Sept.-Oct.) 1944.

"I do not believe that anyone without special training should attempt the more complicated intravenous anaesthetics, but after leaving hospital most newly qualified men will find either in the Forces or in civilian practice that occasionally they will be called upon to give simple anaesthetics and, especially in the Forces, they will find pentothal available and often the only practicable agent. Therefore every medical student should have some experience in simple intravenous anaesthesia and a knowledge of its special limitations and pitfalls. Drugs used

for intravenous anaesthesia [are]: 1. Pentothal sodium. . . . 2. Hexobarbitone, known by various trade names, such as evipan sodium. . . . The first essential is obviously a sound intravenous technique. Here a little practice is worth a deal of precept, but a few golden rules will help the practice to become all the sooner perfect. 1. Never use a stronger solution of pentothal than 5 per cent. . . . 2. Use a 10 c.c. capacity eccentric nozzle syringe. This size is handier to hold than a 20 c.c., and by its size will tend to limit the dose. The eccentric nozzle makes venepuncture easier. 3. Use sharp short-bevel needles. . . . 4. Have your patient in a stable position. . . . 5. Be stable and comfortable yourself. . . . 6. The antecubital fossa is the commonest site for venepuncture, but good veins can often be found on the radial aspect of the forearm, the back of the wrist and hand, or just anterior to the medial malleolus at the ankle. . . . Veins about the ankle should not be used if there are varicose veins in that leg. 7. Test the intravenous position of your needle point by aspirating blood back before you inject. 8. Inject slowly, watching (a) the patient for developing unconsciousness and continued respiration; (b) the needle point to be sure you are still in the vein; (c) syringe to see how much you are giving. 9. Lastly, but most important: keep the air-way clear. . . . There is no fixed dosage . . . for pentothal. . . . If available, nitrous oxide and oxygen should always be given as a supplementary analgesia. . . . A careful observation of the sleep dose and subsequent limitation of the total dose will avoid undue respiratory depression. Extra oxygen may be given if respiration is shallow and anoxia is developing. Apnoea should be treated by controlled respiration with pure oxygen. In all cases make sure that the airway is not obstructed. . . .

"It is a peculiarity of intravenous barbiturates that they do not abolish the laryngeal reflex until the fourth stage (respiratory arrest) is reached. On the other hand there appears to be a definite increase in the irritability of the larynx and a resultant tendency for laryngeal spasm to develop on the slightest provocation. . . . For any operation in which there is likely to be any mucus, blood, pus, vomit or other debris in the pharynx, choose some other anaesthetic. . . . Atropine, gr.  $\frac{1}{100}$ , or scopolamine, gr.  $\frac{1}{150}$ , will dry up the saliva and tend to prevent mucus running down from the mouth or nasopharynx on to the larynx and so initiating either a spasm or a fit of coughing which often develops into a spasm. Do not insert an artificial airway into the mouth before the patient is deep enough to tolerate it, and do not use too big an airway the end of which may irritate the pharynx or larynx. Never pass an endotracheal tube under pentothal alone. Do not let the surgeon give the patient any spasm-producing stimulus, e.g. rectal or vaginal examination, when the anaesthesia is too light."

J. C. M. C.

MC EWAN, DUNCAN: *Refrigeration Anaesthesia of the Extremities: Its Application and Use with a Report of Cases.* J. Florida M. A. 31: 153-158 (Oct.) 1944.

Refrigeration may be used in preparation of the patient as well as for anesthesia because it does away with shock and pain, controls hemorrhage and infection, and eliminates toxic absorption. By its use adequate time for general preparation of the patient for operation is provided, as refrigeration may be carried out forty-eight to ninety-six hours previously. At operation, absolute local anesthesia is obtained with no shock to the system, for anesthesia of the protoplasm and