

## A METHOD FOR THE ADMINISTRATION OF PENTOTHAL SODIUM ANESTHESIA \*

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THE paper presented here is a demonstration of the use of a metal tray and a plexiglass syringe holder for the administration of pentothal sodium anesthesia.

Several months ago a syringe holder constructed of wood was noted in the *Journal of the American Medical Association* (1). This apparatus, made of salvaged material, was copied here at Kelly Field, for the Station Hospital, and was used for some time. It occurred to the writer that perhaps salvaged portions of plexiglass could be used for the construction of a similar holder. This was accomplished through the cooperation of Maintenance at this Field.

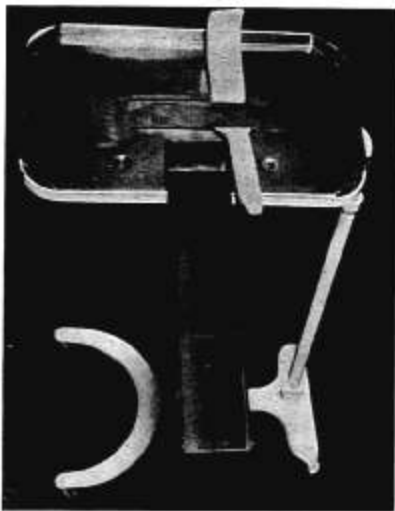


FIGURE 1.

\* From the Station Hospital, Army Air Base, Kelly Field, Texas.

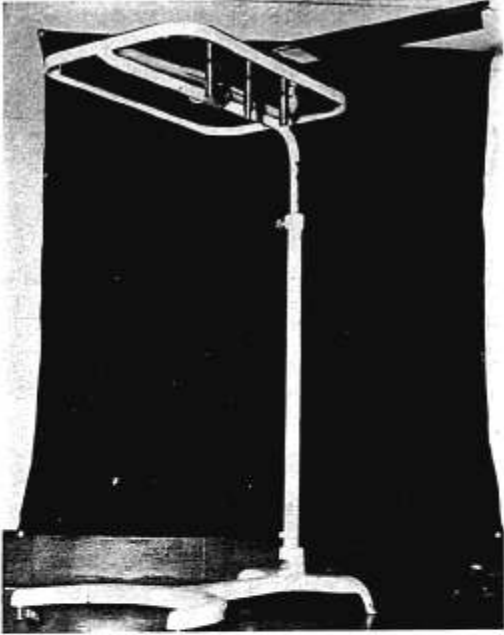


FIGURE 2.

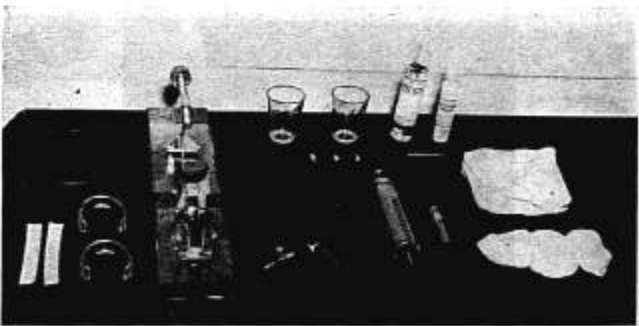


FIGURE 3.

In the operation of this plexiglass holder it had been necessary to use two Mayo stands, one for restraining the patient's arm, and one for maintaining the syringe holder. The set-up was unsatisfactory; it was too bulky, too crowded in the operating room, and the adjustments necessary too time-consuming. This prompted the construction of a metal tray to be used on a Mayo stand, replacing the standard porcelain tray.

The tray, as shown in figure 1, includes the features of an adjustable arm strap and an adjustable projector to maintain the syringe holder. In the center of the tray are two narrow parallel slits, 7 inches in length,

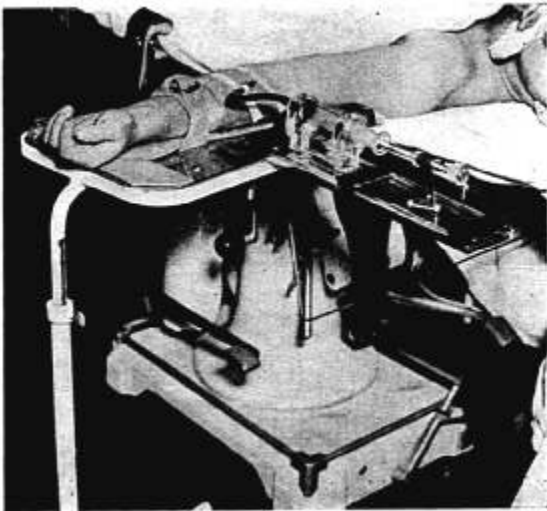


FIGURE 4.

to accommodate the leather arm strap. The length of 7 inches allows the strap to be adjusted to the midforearm of any patient. The strap encircles the metal rod through the center of the Mayo stand, as is shown in figure 2, preventing motion of the strap, securing the tray to the stand, and affording, as well, improper leverage so that the patient can not flex his elbow. A water-proof pad, as seen in figures 4 and 5, was designed for the comfort of the patient's arm before anesthesia, and is so cut as to allow portions of the metal tray to be exposed for necessary equipment, such as alcohol, additional pentothal sodium, needles, metrazol, sponges, etc. One table is now necessary where two

were formerly used. The tray is reversible on the stand so that either arm may be used by the anesthetist.

The position of the projector to maintain the syringe holder can be adjusted to the need; there are three vertical 2-inch sleeves located under the tray for the insertion of the projector's anchor, and this has a height variation of 3 inches. It will be noted that retaining screws hold this anchor in place, as shown in figure 2. The syringe holder can be moved forward or backward on the projector; the foundation of rubber strips holds it securely in place.

The syringe holder, made of plexiglass, was designed for a 30 cc.

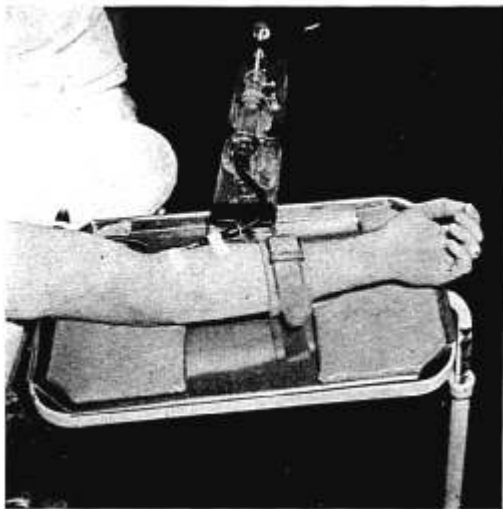


FIGURE 5.

syringe. This size has been found to be the most practical, since the solution used by the writer has been  $15\frac{1}{2}$  grains of pentothal sodium, or one ampule, diluted in 30 cc. of distilled water, a 3.33 per cent solution: the average case utilizing between 10 and 15 grains, or 20 to 30 cc. The syringe is held in place by half circle clips of transparent plexiglass, allowing the calibrations to be clearly seen; these clips are prevented from slipping by small rubber patches, as shown in figures 3, 4 and 5. The long metal screw in line with the plunger and adjacent to it, as shown in figures 3, 4 and 5, when rotated allows for the smallest amount of solution to be administered at intervals accurately. A two-way

stopcock can be attached to the needle for refilling the pentothal syringe or to permit simultaneous administration of continuous intravenous solutions.

#### SUMMARY

A metal tray is presented which is one complete basic unit for the administration of pentothal sodium, serving to hold the patient's arm securely in place, and containing all the necessary materials. A satisfactory method for the accurate administration of pentothal sodium is demonstrated by the use of a plexiglass syringe holder. The combination of these two pieces of equipment permits the anesthetist freedom to dispense oxygen, check breathing, color, pulse and record data as indicated unassisted.

#### REFERENCE

1. Hope, Capt. Robert B.: A Simple Holder for the Administration of Pentothal Sodium, J.A.M.A. 121: 753-755 (Mar. 6) 1943.

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For the information of anesthesiologists who are contemplating application for certification by the American Board of Anesthesiology, Inc., or who are training physicians for the specialty, the following questions have been employed for Part I (written) examination in the past in *Physiology*:

1. What is ventricular fibrillation and under what circumstances may the anesthetist make this diagnosis without error?
2. What advantages are claimed for the method of anesthesia of the extremities with low temperatures?
3. Upon what principle is the immobilizing lung therapy proposed? How is it performed?
4. When massive collapse of a lung has occurred, what explanations are advanced for the sudden dyspnea and cyanosis which follow, other than that the collapsed lung is poorly ventilated?
5. How does anoxemia occur in an aviator flying at 40 thousand feet and breathing 100 per cent oxygen?  
What is meant by the tension of a gas in the blood and how is it measured?
6. Define the following terms as they are commonly used in relation to anesthesiology: (a) Traction reflexes (b) Dead space (c) Relative humidity (d) Controlled respiration (e) Carotid body apnea (f) Secondary saturation.