

as little as 75 mg. 5 illustrative case records.

A. W. F.

LONG, CARROLL H.; MICKAL, ABE, AND OCHSNER, ALTON: *Use of Pentothal Sodium for the Induction of Anesthesia in Thyrotoxicosis*. Am. J. Surg. 55: 71-74 (Jan.) 1942.

In a series of 50 consecutive thyroidectomies, 25 patients received anesthesia induction by intravenous pentothal sodium supplemented by one or more of the anesthetic gases by inhalation. The remainder were anesthetized by inhalation anesthesia alone.

A statistical study of these patients demonstrates in the group receiving the intravenous barbiturate a constantly lower pulse rate and temperature level during the postoperative period.

Unexpectedly, the accumulated data reveal a shorter postoperative reaction time in the group receiving the pentothal sodium. 3 references.

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RICHARDS, R. K.; KEUTER, K., AND KLATT, T. J.: *Effect of Vitamin C Deficiency on Action of Different Types of Barbiturates*. Proc. Soc. Exper. Biol. & Med. 48: 403 (Nov.) 1941.

We have studied the effect of vitamin C depletion upon the action of different barbiturates, using barbital as a long-acting member, nembutal as a short-acting drug and pentothal sodium as an example of ultra-short action. The barbiturates were administered intraperitoneally to guinea pigs and their sleeping time observed. The animals were then placed on a vitamin C-free diet for thirty-three days and during this period the effect of injection of the barbiturates was re-determined.

There was no significant change with either barbital or pentothal, but under nembutal the sleeping time was prolonged by vitamin C deficiency. In

these latter animals administration of vitamin C promptly restored normal sleeping times.

Since it is known that vitamin C deficiency causes depletion of liver glycogen, we investigated whether or not low glycogen might have been responsible for the changes observed. Marked fatty changes in the liver are also known to follow vitamin C lack. In our hands, there appeared to be no correlation between low glycogen content or high fat and prolonged sleeping time. Nor were we able to find any histological changes in the livers of our vitamin C deficient animals such as can be demonstrated after administration of such substances as chloroform or carbon tetrachloride.

We have therefore reason to believe that vitamin C may be directly or indirectly connected with the destruction of the short-acting barbiturates such as nembutal. It is possible that failure of liver enzymes accounts for the slower destruction of these drugs, but as yet no evidence is available on the point.

The experiments further substantiate the belief that the metabolism of pentothal is essentially different from that of nembutal and related compounds, and that the liver plays little part in this process.

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BATTEN, DOUGLASS H.: *Hypoxia—The Hazard of the Operating Room*. Am. J. Surg. 55: 83-87 (Jan.) 1942.

From the practical standpoint there are six factors which are of paramount importance in the prevention of hypoxia:

1. The avoidance of the promiscuous use of respiratory depressant drugs.
2. Nitrous oxide should never be given with less than 20 per cent of oxygen. If sufficient depth of anesthesia cannot be obtained with this mixture another agent should be employed.

3. No change in the respiratory rate or volume and no alteration in pulse rate or blood pressure should occur in the well conducted anesthesia.

4. On return of the anesthetized patient to bed a competent and well instructed person should be delegated to remain constantly at the bedside. The patient must be protected against aspiration of mucus and vomitus and from asphyxia from a relaxed tongue.

5. It is recommended that patients exhibiting any of the signs of hypoxia in the operating room receive high oxygen concentrations on return to bed.

6. As regards spinal anesthesia it is recommended that its use should not become a routine matter. Patients for spinal anesthesia should be selected from those whom we classify as good risks. Seevers and Waters have shown that a "decrease in alveolar as well as arterial and venous blood oxygen occurs in spinal anesthesia." McClure and his associates have demonstrated a decrease in oxygen saturation of arterial blood of approximately 10 per cent under spinal anesthesia. Such hypoxia is ordinarily attributed to relaxation of the peripheral vascular bed, decreased tonus of the skeletal muscles, diminished respiratory excursion from intercostal paralysis and inactivation of the medullary centers. No spinal anesthesia should ever be undertaken unless adequate means of providing oxygen are instantly available.

The problem of hypoxia in the delivery room is both intricate and interesting. During anesthesia ordinarily accompanying the second stage of labor, an oxygen intake of less than 20 per cent must not be permitted. It is interesting to note that even in cases in which cyclopropane was administered with 75 per cent oxygen the oxygen of the fetal arterial blood ranged from 45 per cent saturation with forceps delivery to 50 per cent in normal deliveries. This means that even with a very

potent agent like cyclopropane the fetus suffers to some extent from hypoxia. 21 references.

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SMITH, CALEB H.: *Regional Anesthesia for High Ligation of the Internal Saphenous Vein.* Am. J. Surg. 55: 141-142 (Jan.) 1942.

The anterior crural nerve is first blocked. A skin wheal is raised just below Poupart's ligament 1 cm. lateral to the femoral artery. With a finger holding the femoral artery medially, a needle 5 cm. long is attached to the syringe, introduced through the skin wheal in a direction perpendicular to the surface of the skin and advanced until the resistance offered by the fascia iliaca is overcome. The needle is then gently advanced about 1 cm. farther until paresthesias, which radiate toward the knee or inner side of the thigh or leg, are induced. Without moving the needle the syringe is connected and 5 cc. of a 2 per cent procaine hydrochloride solution containing adrenalin hydrochloride 1:100,000 is injected. . . . If the point of the needle does not reach the nerve by the first puncture, the needle is partly withdrawn and its direction slightly changed outward, then inward, care being exercised to keep the finger on the femoral artery retracting it medially if necessary to protect it from the point of the needle. If paresthesias are not induced, the anesthetic solution is distributed fanwise beneath the fascia iliaca. . . .

Next the obturator nerve is injected. With the thigh slightly abducted the pubic spine is defined and a skin wheal raised just below and lateral to it. A needle 8 cm. in length, unattached to the syringe, is introduced through the skin wheal in a direction perpendicular to the skin surface and advanced toward the horizontal ramus of the pubis. When the needle impinges on the bone,