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Effect of Amytal upon the Fetus and its Transmission Through Placenta of White Rat.

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(Introduced by J. C. Donaldson.)
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The widespread use of sodium amytal in obstetrics and in animal experimentation, where observations upon the fetuses are to be made, has necessitated a study of the placental transmission of this anesthetic. A review of the literature shows that there is general agreement that there is no danger to the fetus when the mother is anesthetized with this drug.

Our experiments were divided into 2 main groups: (1) those showing the effect upon the fetuses of anesthesia of the mother with sodium amytal, and (2) experiments showing the effect upon mothers of injections of this same anesthetic into the fetuses. In the first group, pregnant white rats were completely anesthetized with a 2% solution of sodium amytal. The anesthetic dose used was 80 mg. per kilo of body weight minus the estimated weight of the fetuses. It was found that the dose of sodium amytal calculated from the total weight of the pregnant animal proved lethal for the mother in 60% of the cases, but doses calculated from the weight of the mother minus the estimated weight of the fetuses were never lethal. In some cases, small amounts of ether were necessary to supplement the sodium amytal anesthesia. At various intervals, during the period of anesthesia of the mother, the fetuses were tested, both *in utero* and when removed from the uterine cavity. When stimulated with a needle, they responded as did the normal controls. We conclude, therefore, that sodium amytal does not pass the placenta from mother to fetus in large enough quantities to be detected by the gross tests employed.

In the second group of experiments, which were performed to determine the transmission of sodium amytal from fetus to mother, the fetuses or amnia were injected with the minimum amount of the drug necessary for complete anesthesia of the mother. The mothers became anesthetized almost as quickly as did animals in which this anesthetic was injected directly into the peritoneal cavity. The results demonstrate that sodium amytal is absorbed both from the abdominal cavity and from the amniotic sac of the fetuses with relative rapidity. Furthermore, approximately the entire amount

passes through the placenta. This conclusion was further substantiated by the fact that when the fetuses were injected with an amount calculated as a minimal lethal dose for the mother, the latter died after a few minutes in 75% of the cases.

We conclude: 1. The amount of sodium amytal necessary to anesthetize a pregnant rat does not in any way interfere with the viability of the fetus; the fetus is not anesthetized, at least not completely, and readily responds to gross stimulation. 2. Sodium amytal quickly passes from fetal circulation into the maternal circulation. 3. In calculating the amount of sodium amytal necessary to anesthetize a pregnant animal, the weight of the fetuses must be subtracted from the weight of the mother.

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A New Capillary Hematocrit.

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The apparatus to be described is an accurate and inexpensive hematocrit of extremely simple construction, employing heparin as an anticoagulant. Values are expressed directly in per cent by measuring the column of packed blood cells with a millimeter scale. That readings are made directly is an obvious advantage over a somewhat similar hematocrit described by Epstein,[1] with which the readings are calculated by dividing the length of the column of cells by the length of the original column of blood, and multiplying the quotient by 100.

The hematocrit here described is a pipette 12 cm. long, cut from selected glass tubing of uniform bore, having an outside diameter of 5 mm. and a bore of 0.5 to 0.8 mm. One end is beveled, and exactly 10 cm. from this end is engraved a circular mark. Before use the tube is lined with the anticoagulant by drawing an aqueous solution of ½ to 1% heparin through the pipette which is then allowed to dry. The tube is then sealed by encircling it with a rubber band No. 84 which is 9 cm. long and 1.3 cm. wide. No subsequent leakage occurs if this sized rubber band is placed securely around the pipette.

A rubber mouth suction tube is attached to the unbeveled end of

[1] Epstein, A. A., *J. Lab. and Clin. Med.*, 1915, **1**, 610.