

LULL, C. B., AND HINGSON, R. A.: *An Evaluation of Continuous Caudal Analgesia*. New York State J. Med. 44: 2331-2341 (Nov. 1) 1944.

"Since 1942 we have published, individually and in collaboration with our associates, several articles on continuous caudal analgesia which have dealt mostly with our observations and experience in the use of this method in vaginal delivery, cesarean section, and gynecologic surgery. We have particularly stressed the 'don't,' the 'stop, look, and listen' signs which must be observed if successful caudal analgesia is to be obtained with safety for both mother and child. . . . During the last three years we have, in cooperation with J. Parsons Schaeffer, dissected the spinal cords, peridural spaces, and sacrums of 241 cadavers. We have observed that the anomalies of the sacrum are more prevalent than those found in any other bone in the body. . . . We make a practice in our prenatal clinic to determine ahead of time the condition of the sacral hiatus by palpation. Thus the patients with easily palpated sacral hiatus are listed on the examination chart. Those in whom the hiatus cannot be felt are declared unsuited for caudal analgesia in routine cases. However, when special medical indications, such as tuberculosis or heart disease, are present, these patients are x-rayed by the Bishop modification of the Moloy technic for a special sacral study. These x-rays are produced by a fifteen degree angulation of the roentgen tube to direct the ray through the intrapubic approach. . . . We believe . . . that continuous caudal analgesia will become a permanent factor in the practice of obstetrics, particularly in the handling of premature babies, cardiac disease, respiratory infections, and the toxemias of pregnancy. . . . The incidence of complications and the contraindications indicate that this

is still a technic to be performed by specialist in the hospital."

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HELLMAN, L. M.; SHETTLES, L. B. MANAHAN, C. P., AND EASTMAN, N. J.: *Sodium Pentothal Anesthesia in Obstetrics*. Am. J. Obst. & Gynec. 48: 851-856 (Dec.) 1944.

"Between September 1, 1940, and March 31, 1944, 1,415 deliveries were carried out at the Johns Hopkins Hospital under sodium pentothal anesthesia. Both 2.5 and 5 per cent solutions of the drug were used, but since the latter concentration has proved more satisfactory in our hands, this has been employed in the great majority of the cases. . . . Our impression of sodium pentothal anesthesia, in general, is in keeping with the many favorable reports which have issued from various surgical clinics. Induction is instantaneous and quiet. The patient is unconscious within twenty or thirty seconds after the first few c.c. of the solution enter the vein, and actual operating can usually be started within a minute or so—this without 'pushing' the anesthesia. Postoperative vomiting is rare and there is little 'hang-over.' There were but three cases of postoperative pneumonia in the 1,415 cases. In our experience, moreover, patients much prefer sodium pentothal to other types of anesthesia they have had. . . . In employing this agent for spontaneous delivery, it was our hope to administer it à la reine toward the end of the second stage, deepening the anesthesia with pains and allowing the patient to regain semiconsciousness between. This proved unsuccessful for two reasons: (1) The procedure entailed dealing for the most part with semi-anesthetized patients and it is well known, of course, that this state of partial anesthesia is associated with particular dangers; (2) since the patient, semiconscious, often moved

about under the stimulation of pains, the needle frequently became dislodged from the vein giving rise to serious mechanical difficulties. It is our opinion, accordingly, that sodium pentothal anesthesia is not suitable for spontaneous delivery. . . . Although the relaxation of the abdominal walls provided by sodium pentothal is not sufficient for many abdominal operations, it is quite adequate for cesarean section. Bleeding is less than with gas-oxygen-ether, as is also, in our opinion, postoperative distention. Of the fifteen versions and extractions reported, six were on second twins, and, in the remainder of cases, the babies were small. Except for versions on second twins, sodium pentothal is ordinarily contraindicated for this operation because the uterus does not relax well. . . . Sodium pentothal passes through the placenta, and within ten or twelve minutes, reaches equal concentrations in fetal and maternal bloods. However, there is a period of five minutes after starting the anesthesia during which the amount of drug reaching the fetus is very small and throughout the first ten minutes is decidedly less, as a rule, than after fifteen or twenty minutes of anesthesia. . . .

"There were seventy cases in which the baby was lost, giving a total stillbirth and neonatal mortality rate, uncorrected, of 4.9 per cent. . . . If we are to make an intelligent attempt to evaluate the possible effect of sodium pentothal on fetal prognosis, it would seem obligatory to eliminate from consideration . . . [thirty-seven cases], in which the fetus had clearly died before the anesthetic was started, or suffered craniotomy. If this subtraction be made, the resultant stillbirth and neonatal mortality rate becomes 2.4 per cent. that is, thirty-three infants lost among 1,384 infants, in all of which cases the fetal heart was audible when the anesthesia was started. . . .

Ten premature infants all weighed less than 2,000 grams and showed at autopsy extensive atelectasis. . . . Our prematurity mortality with sodium pentothal has been slightly less than with other forms of anesthesia. There were four cases, listed as "Unknown," in which the cause of death was not altogether clear, but in each of these cases, a pathological condition was present which could well have accounted for the infant's death. . . . As far as we have been able to determine there was no instance in the entire series of 1,415 cases delivered under sodium pentothal anesthesia in which this anesthetic agent was directly responsible for an infant's death, or in which it played any demonstrable role. It is our impression that blood loss is less with sodium pentothal than with gas-oxygen-ether. . . . There were two maternal deaths in the series. . . . [one] . . . of these deaths, the condition of the patient was becoming progressively worse for several hours prior to delivery and continued downhill at about the same rate post partum. There was no evidence that the anesthetic aggravated the patient's condition. Although the second case must be classified as an anesthetic death, it can be charged against ether with as much justification as against sodium pentothal, and can be charged with even greater validity to poor clinical judgment on our part. . . . It is not the purpose of this paper to claim that sodium pentothal is an ideal anesthetic for operative obstetrics nor even that it is the best—certainly not for all cases. As our figures indicate, however, we have found it satisfactory in a substantial series of cases, are using it almost routinely for low forceps and cesarean sections, and believe that it constitutes an important addition to obstetric anesthesia." 1 reference.

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