

number of failures should be increased, owing to the difficulties involved in the insertion of the large needle in some patients. With use of the needle technique the complications which are increased in number are (1) the perforation of the dural sac after the needle is in place with subsequent intraspinal injection, (2) the broken needle and (3) the possible trauma inside the canal if the needle is manipulated by the patient moving about on her back.

"In general, we have noticed some difficulty in maintaining the effect of the anesthetic that is used over a long period of time. . . . The thought has occurred to us that possibly the nerve roots may become refractory to the action of the drug after prolonged anesthesia. We have noticed this phenomenon in 3 cases in which we felt certain that the needle had not become dislodged from its proper place in the caudal canal." 28 references.

J. C. M. C.

DIDDLE, A. W., AND HILL, A. M.: *Pulmonary Embolism during Continuous Caudal Anesthesia: Report of a Maternal Death*. West. J. Surg., Obst. & Gynec. 51: 427-431 (Nov.) 1943.

"The potential dangers of continuous caudal anesthesia in obstetrics have been emphasized by most authors employing the procedure. . . . It is believed this protocol represents the first maternal death which may be attributed indirectly to the method with the production of a pulmonary infarct. . . . Mrs. (No. D-333) was a married, 22 year old, white housewife. . . . Physical examination at the first visit . . . revealed a healthy appearing, well developed, young woman. . . . Progress of the pregnancy was satisfactory. . . . August 3, 1943, at 2:00 P.M. labor began. . . . A blunt, bevel-pointed B-D

spinal needle size 15 G made by Becton, Dickinson and Company was inserted in the midline into the sacral hiatus using a guide needle in the manner described by Adams, et al. . . . Forty cubic centimeters of one per cent procaine in physiological saline was administered slowly over a 15 minute period. During the procedure clear solution was returned into the syringe. Subjective relief from pain, loss of anal sphincter tone, relaxation of the vaginal outlet, and diminution of sensation to pin prick to within two inches of the umbilicus was obtained within 25 minutes. This amount of anesthesia, which was considered 'comfortable' by the patient, was maintained. . . .

"Complete dilatation of the cervix was present by 11:15 P.M. After two and one-half hour second stage of labor, preparation was made to do a classical application of Kielland forceps for a transverse arrest (ROT). . . . There was not sufficient relaxation of the uterus to permit manipulation of the anterior forcep blade. Therefore, it was decided to give open drop ether long enough to complete this procedure. . . . As the maneuver was coming to a close the patient suddenly 'caught' her breath. The anesthetic mask was removed. Observations at the moment included: the lips and skin were normal color, the pupils corresponded in size to the upper level of the surgical stage. . . . One deep respiratory gasp was followed by several shallow movements. Cyanosis appeared with moderate speed. Artificial respiration was begun and continued until forced respiration with oxygen could be instituted. Near the terminal stage coffee ground vomitus was raised. When the mother's survival seemed improbable, forceps extraction of the baby was done with moderate difficulty. . . . A nonviable term size infant was obtained.

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"[At] postmortem examination . . . a large, depressed, fresh, dark red infarct was found in the inferior half of the upper lobe of the left lung. . . . The source of the embolus was then sought. . . . The region of the coccygeal needle puncture was opened. The sinus tract deviated slightly to the left of the midline at the upper opening. Within the spinal canal in the lower sacral segment was a soft blood clot approximately 2 by 1 cm. This was removed. Underneath was a thrombosed vessel in the venous plexus overlying the posterior wall of the spinal canal. . . . It is impossible to ascertain whether the embolus appeared before or during the time ether was being given. . . . Nevertheless it seems unlikely that an infarct of the size found could have been produced previously without demonstrable clinical symptoms. Also the character of the onset of the fatal outcome suggests that it happened during anesthesia. With this assumption a more clear cut explanation exists to account for sudden death. An already limited oxygen supply supplied by the pulmonary arterial branch was suddenly lowered below survival level by the exclusion of the aerating surface which became occluded. Since a blood ether level is not available, the hypothesis will remain contested. In any event, the opinion remains with those present that death was not due to overdosage of ether. At the same time the idea is held that the infarct alone was not large enough to kill. Thus, more than one factor led to the fatality.

"The prime purpose of this communication is to stress the point that traumatization of the venous plexus within the sacral canal with subsequent thrombosis and formation of an embolus is potentially possible in cases where continuous caudal anesthesia is used. Failure to obtain blood during the early stage of the procedure described

does not always prove that injury has not been done and/or will not follow." 14 references.

J. C. M. C.

HUNTER, A. R.: *The Rectal Administration of Pentothal Sodium*. Brit. J. Anaesth. 18: 126-127 (Jan.) 1943.

"Some eighteen months ago the author published in this journal an article describing the effects of the short acting barbiturates administered rectally. From the investigations then carried out it was concluded that Pentothal Sodium was too erratic in its action to be successfully employed as a rectal basal narcotic. . . . Lest the conclusions previously enunciated had been vitiated by the use of stale solutions it was thought desirable to repeat this part of the experiment with doses made up immediately before use. Each patient received 15 mgm. of Pentothal per pound of body weight. . . . The subjects of this experiment were adults, mostly females, who required tonsillectomy. In addition to the Pentothal each patient received 1/60th of a grain of atropine by hypodermic injection half an hour before operation; no preliminary opiate was administered. The results were satisfactory though not perhaps quite so good as those with the sulphur free barbiturates. . . . In general the rectal administration of Pentothal Sodium in dosage of 15 mgm. per pound of body weight is a safe and satisfactory method of obtaining fairly deep basal narcosis." 2 references.

J. C. M. C.

BETCHER, A. M.: *Pentothal Sodium: A Survey of its Field of Usefulness in a Military Hospital*. War Med. 4: 425-432 (Oct.) 1943.

"Barbiturate anesthesia has never been employed in military surgery previous to the present war. . . . The train-