

"In an attempt to find the drug best suited to our purpose we have investigated clinically the effects of procaine, pontocaine, and metycaine. . . . The term low caudal block is used when analgesia is required no higher than the 1st lumbar segment. . . . For low caudal block an initial dose of 30 cc. of 1.5 per cent metycaine solution is administered. This is given slowly and the table need not be tilted. Within 15 minutes this will produce surgical analgesia which will persist for about one hour. If subsequent injections are required, 30 cc. at hourly intervals will suffice. In certain instances low caudal block may be continued post-operatively. After hemorrhoidectomy 10 cc. of 1.5 per cent metycaine solution may be administered hourly for 12 to 14 hours, with complete relief of pain during the period of block. Subsequent pain in the operative site has seemed less severe. Mid-caudal block is employed for operations in which complete conduction block is required in the upper lumbar and lower thoracic segments as well as in the segments below. . . . For abdominal operations it is necessary to block the upper lumbar and lower thoracic nerves. . . . When analgesia is required for operations in the upper abdomen and lower chest, that is, with complete conduction block to T<sub>4</sub> or higher, we term the procedure high caudal block. Our experience in this field has been limited to 33 cases, but the results so far have been encouraging. . . . Continuous caudal analgesia has one definite disadvantage observed in numerous patients during or shortly after the initial injection. . . . Nervousness, nausea, and occasionally vomiting may occur during the course of caudal analgesia. . . . Peripheral circulatory collapse from continuous caudal analgesia has occurred twice in our experience. . . . Infection has occurred twice as a complication of cau-

dal analgesia in surgical patients. . . . In our hands, continuous caudal analgesia has been 96.7 per cent effective for the operation for which it was intended. Failures have been due to learning, to teaching, and to anomalies of the sacrum. . . . Continuous caudal analgesia in surgery may be supplemented by inhalation or intravenous anesthesia or additional local or regional block. . . . We have administered, or closely supervised, the administration of continuous caudal analgesia to 903 patients undergoing various surgical operations. . . . We conclude that continuous caudal analgesia is a useful addition to the armamentarium of the surgeon and anesthetist, because it has the desirable features of regional and local anesthesia plus controllable duration and level of effect." 18 references.

J. C. M. C.

BISHOP, H. F.: *Continuous Caudal Anesthesia*. S. Clin. North America, Philadelphia No.: 1565-1574 (Dec.) 1943.

"An increasing number of articles have appeared in the literature during the past year on an anesthetic method which has been designated by Hingson and Edwards as "continuous caudal anesthesia. . . . This form of anesthetic production has been practiced at Walter Reed General Hospital during the past year in a small group of obstetrical and surgical patients. The first patient was injected by this intermittent method on July 13, 1942. Since that time a total of eighty-eight patients have received continuous caudal anesthesia. . . . Both catheter and needle techniques have been used although the majority of administrations have been by the catheter method. . . . A gratifying feature of this method is the lack of untoward effects on the baby. This method has possible applications as an anesthetic for certain surgical operations and for the production of

lumbar sympathetic block." 6 references.

J. C. M. C.

CARANGELO, JOHN: *Continuous Caudal Analgesia in Obstetrics*. South. M. J. 37: 80-83 (Feb.) 1944.

"A total of sixty-one patients was given continuous caudal analgesia; forty-two primiparas, and nineteen multiparas. . . . The average mety-caine dosage was 1.4 grams. . . . No supplementary anesthesia was needed in any case. . . . Of the forty-two primiparas in this series, twenty-five were delivered operatively, seventeen spontaneously. . . . All the patients receiving caudal analgesia were checked six weeks after delivery, and no complaints or complications were encountered. . . . The advantages of caudal anesthesia are manifold. Pelvic and perineal relaxation is marked. Although the urge to bear down disappears, there is no motor paralysis, and the patient may cooperate by bearing down voluntarily. Uterine tonicity is maximal, and thus blood loss is reduced to a minimum. It is of practical value in dystocia cases, and may be administered to give an exhausted patient a rest during a protracted labor with gratifying results. The period of labor appears to be shortened in most cases. It is ideal for cardiac or pulmonary conditions." 11 references.

J. C. M. C.

HINGSON, R. A., AND EDWARDS, W. B.: *Continuous Caudal Analgesia: a Step Forward in the Conquest of the Pain of Childbirth*. Pennsylvania M. J. 47: 335-340 (Jan.) 1944.

"On Aug. 11, 1942, the first patient in Pennsylvania to be delivered under continuous caudal analgesia had her baby at the Lying-In Hospital. On Aug. 29, 1943, the same patient had her second baby under continuous caudal analgesia. Within this space of time,

2000 Philadelphia mothers have been delivered of babies in absolute comfort and in relative safety to them and their newborn. . . . Because of the interest in this subject in Philadelphia, and because of the influence of the medical schools in this city, the profession throughout the state of Pennsylvania has contributed a great deal more to the development of this new type of pain relief in labor than has been the case in any other state. This may be illustrated by the fact that of the 12,000 babies born under continuous caudal analgesia throughout the United States and Canada, 4000 of them have been born in Pennsylvania. . . . We no longer look upon continuous caudal analgesia as an experiment, but as a new and tried procedure that will be found useful in the practice of safe and painless labor and delivery. There will be improvements and alterations in the method as time goes on, and each should be accepted and evaluated. At all times we should work towards greater safety and simplicity. There is a large field to be explored in the management of the toxic patient, the abnormal presentation, and the premature case. In our few cases of these types, we have been more than gratified with our results."

J. C. M. C.

CHAIKOFF, J. S.: *Our Experience with the Hingson-Edwards Technique of Continuous Caudal Analgesia*. Canad. M. A. J. 50: 52-60 (Jan.) 1944.

"The first continuous caudal analgesia was administered at our hospital [Mount Sinai Hospital, Toronto,] on February 19, 1943. . . . To date, our series stands at 31 cases attempted, with 26 (84 per cent) successful administrations and 5 (16 per cent) failures. . . . Continuous caudal analgesia is a difficult technique and should not be attempted by anyone not trained in spinal or local procedures. It provides