

history of sensitivity to procaine; (7) very obese patients where the landmarks are not palpable. . . . In all of our patients we have found that the second stage of labor is greatly altered. The alteration is due to two factors: 1. The patient has no desire to bear down because of anesthesia of the pelvic structures. 2. Relaxation of the pelvic floor and perineum. . . . Our fetal mortality was 38 deaths, or 2.6 per cent. . . . Irregularities and slowing of the fetal heart rate occurred shortly after the first injection of the solution in 20 per cent of the cases in the series in which procaine was used. This was also noted in 60 per cent of the cases in which metycaine was used. In succeeding injections only 1 per cent showed irregularities in the fetal heart rate when procaine was used, while 20 per cent showed irregularities when metycaine was used. In these cases where the irregularities and slowing occurred with subsequent injections, there were also noted large quantities of meconium. In 5 cases in the latter group the babies were stillborn; the autopsy revealed no findings except diffuse edema of the brain. One of these fatalities occurred in the procaine series, and four of them in the metycaine series. In one case the fetus died in utero five minutes after the third injection. Within two minutes after the injection the fetal heart became irregular and gradually weaker until it completely stopped. All of the above mentioned stillborn died in the first stage of labor. Prior to our use of caudal anesthesia we had only one full term stillbirth in 1,500 cases at this clinic. As compared to five in this reported series, all of the deaths mentioned above occurred in cases where the babies were alive when the patients entered the hospital, the deaths occurring during labor and before delivery. This is a small series of cases and no definite conclusions can be drawn, but

it is our impression that these deaths were a direct result of the drugs used. Since these cases in which procaine was used showed less fetal distress, we believe that procaine is a safer and less toxic drug from the standpoint of the baby than any other drug used. . . . As continuous caudal anesthesia necessitates a larger percentage of operative deliveries, it should be used only by a competent obstetrician who is well trained in all types of operative techniques. . . . One of the great advantages of continuous caudal anesthesia is that there is no respiratory depression of the baby. Continuous caudal anesthesia has proved of value in the management and control of symptoms in eclampsia. Continuous gravity administration has proven to be a great technical advance in continuous caudal anesthesia. All patients should receive premedication with a barbiturate. In addition, it is advisable to give each patient, as premedication,  $\frac{3}{4}$  gr. of ephedrine to alleviate the possibility of circulatory collapse. The indwelling catheter technic is safe, less traumatic, and more comfortable to the patient. Absolute asepsis must be observed at all times." 6 references.

J. C. M. C.

EASLEY, ELEANOR B.: *Comment Following Movie on Continuous Caudal Analgesia in Obstetrics*. North Carolina M. J. 5: 491-492 (Oct.) 1944.

"I intend to talk chiefly about the difficulties encountered with the method. The additional time required has been the factor which has limited my use of the method. . . . Several of the published reports of accidents have been particularly thought provoking. Among these is the report by Diddle and Hill of a fatal pulmonary embolism arising from a thrombosed vein in the sacral canal. . . . Perhaps it is unwise, when caudal analgesia is used, to allow attempts at spontaneous expulsion. . . .

Outlet forceps are usually necessary, but because of the excellent relaxation, I have found lacerations and extensions from episiotomies less frequent with caudal analgesia than with other forms of anesthesia. . . . Fetal distress, presumably due to anoxia, has been reported when the maternal blood pressure goes below 90 systolic. . . . I am always afraid that the tip of the needle may move when the mother turns over or is transferred from the bed to the delivery table. Several times I have seen evidence of intravenous spill when an injection was given just after the patient had been moved. . . . The use of continuous caudal analgesia has been attempted in Durham in 100 cases. These cases represent the beginning efforts of ten different people. . . . A third of our cases were failures. . . . In spite of our inexperience, clearly demonstrated by the high percentage of failures, there were no serious accidents due to caudal analgesia. . . . There were 4 fetal deaths and 1 maternal death from causes unrelated to the caudal analgesia. . . . There was one broken needle, which was easily recovered. . . . Lull and Irving have noticed decreased perineal damage in their patients. I agree with this finding and believe also that there is less cervical damage. Unfortunately the method works best for those who need it least—the normal patients who are having rapid, uneventful labors." 7 references.

J. C. M. C.

CUNNINGHAM, H. A.: *Caudal Anesthesia*. Wisconsin M. J. 43: 931-934 (Sept.) 1944.

"Many warnings have been voiced by authors each representing a newer or at least a different mode of attack to the problem of caudal anesthesia. . . . The charge of selecting the work is accepted because caudal is not a routine procedure, only 27 per cent of the work being done by this technic. [133 pa-

tients.] In view of the many successful genito-urinary blocks, there is little reason to doubt that these can be transferred to obstetric work. A single injection caudal has proven its worth. A continuous injection caudal is beyond our scope. The equipment we use is simplicity itself—the Lundy-Labat syringe and caudal needle. When the opportunity presents, we infiltrate the skin, but it is not always necessary. Otherwise, one closed syringe and one needle are used—contamination is at a minimum. The material used is 1.5 per cent metycaine, but 2 per cent procaine is just as satisfactory. No ephedrine is used. We have used roentgenology and dissection to demonstrate the equipment and amounts of solution required. Thus far, clinical results bear out these findings. I do not believe that the obstetrician has either the time or the inclination for this work." 15 references.

J. C. M. C.

THOMAS, R. C.: *Caesarean Section under Spinal Analgesia*. J. Obst. & Gynaec. Brit. Emp. 51: 324-329 (Aug.) 1944.

"We recently published the records of 121 Caesarean sections performed under spinal analgesia. . . . Since the previous article was written, we have continued to use heavy Nupercaine as the anaesthetic of choice for the operation of Caesarean section, and we now record a further 82 sections carried out under spinal analgesia induced with this solution. . . . There has not been a maternal death due to the anaesthetic, or a maternal death under the anaesthetic from any other cause whatever. . . . The overall maternal mortality is . . . 0.98 per cent. . . . Our confidence in heavy Nupercaine . . . as a safe and suitable drug for use in spinal anaesthesia in selected cases of advanced pregnancy remains unshaken."

J. C. M. C.