tothal sodium to the average adult male with the usual premedication of morphine sulfate grs. ½ and atrophine grs. 1/150 (h) came to 1.8 cc. per minute of operating time. In combination with nitrous oxide and oxygen, either 50–50 or 60–40, the amount of pentothal was reduced to 0.93 cc. per minute. Nitrous oxide plus oxygen plus pentothal was not attempted in intra-abdominal procedures or other operative procedures demanding relaxation.

Due to the fact that herniorrhaphies, appendectomies, excisions of pilonoidal cysts, and rectal cases constitute a large part of operative procedures in the fleet, spinal anesthesia assumes a correspondingly important position. Spinal anesthesia was confined to procedures carried out below the level of the umbilicus.

Any spinal anesthesia with novocain giving forty-five minutes or more of anesthesia adequate for the operation performed was called satisfactory. Seventy-two per cent of spinal administered was unsatisfactory on this basis.

Continuous spinal was performed only 5 times with no failures and no complications. 1 reference.

R. J. G.

ANDROS, G. J.; DIECKMANN, W. J.; OUDA, P.; PRIDDLE, H. D.; SMITTER, R. C., AND BRYAN, W. M.: *Spinal (Saddle Block) Anesthesia in Obstetrics.* Am. J. Obst. & Gynec. **55**: 806–820 (May) 1948.

Anesthesia for delivery is a precise procedure and depends on the presence of one qualified to administer the anesthetic of choice. It is the purpose of this paper to determine the advantages and disadvantages of spinal (saddle block) anesthesia for the relief of pain in labor and for the delivery. It is the author's belief that with some training the average physician can administer spinal anesthesia for the relief of pain of the late second stage and for the delivery, with a high degree of safety.

A study of 719 cases of modified saddle block anesthesia was carried out at the Chicago Lying-in Hospital.

Spinal anesthesia was done in the patient's bed, utilizing the third or fourth lumbar interspace. Spinal puncture was performed and 0.1 cc. of spinal fluid aspirated, followed by a rapid injection of solution. The patient was placed flat in bed, with the neck flexed, thirty seconds after injection. Blood pressure, maternal and fetal pulse, taken every five minutes for thirty minutes, and every fifteen minutes thereafter.

Buffered nupercaine in 1:200 solution was administered to 404 patients in dosage of 2.5 mg. Unbuffered nupercaine (2.5 mg. per cc. in five per cent glucose) was tried in 109 cases. Pontocaine hydrochloride in 5 mg. dosage was used in 115 cases. Novocaine in 27 cases in 50 mg. dosage was used. Forty-seven cases received metycaine in dosage of 33 mg. Seven cases received monocaine formate in 50 mg. dosage in crystalline form dissolved in 1 cc. of 10 per cent glucose.

In 3.3 per cent of the cases there was failure to obtain anesthesia.

The plan of anesthesia was to institute spinal puncture in multiparas at 5 or 6 cm. of cervical dilatation and in primiparas at 8 cm.

Sixty-five per cent of the cases received preliminary sedation. Morphine 0.01 Gm. alone or in combination with hyoscine 0.0005 Gm. was used most commonly.

Eighty-two per cent of the patients were under saddle block anesthesia for less than 30 per cent of their labor. The mean of the entire group was 19.4 per cent.

The duration of complete uterine analgesia from novocain and metycaine was from sixty to ninety minutes, perineal anesthesia usually lasting two

hours. Pontocaine ninety to one hundred and five minutes with perineal anesthesia between two and two and one-half hours. The mean duration of anesthesia with nupercaine was two hours and nineteen minutes. Perineal anesthesia from three to four hours.

Complications as to mechanism were insignificant. There was no significant increase under spinal anesthesia in low forceps deliveries preceded by manual or forceps rotation, nor in mid-forceps procedures.

Eighty per cent of the cases had a second stage of less than one hour.

With no oxytocic in the second stage 89 per cent of the placentas were delivered in six minutes or less, and 58 per cent in three minutes or less.

Episiotomy blood loss was not significantly different from that found by Odell and Seski.

Ninety-five of the infants breathed spontaneously in less than one minute after delivery. In only one per cent was respiration delayed over three minutes. In 80 per cent the initial cry was less than one minute.

Three neonatal deaths occurred. The cases were resorption atelectasis, congenital uretheral obstruction and pneumonia.

In 94 per cent of the cases skin anesthesia was at the ninth or tenth thoracic segment. Five patients had anesthesia to the fifth thoracic and none higher.

There was no significant change in the blood pressure in 44 per cent and a maximum fall greater than 20 mm. Hg occurred in 26 per cent.

Fetal bradycardia below 100 beats per minute occurred in 11 instances.

There was an increased incidence in postpartum catheterizations as compared to a control group with general anesthesia.

Postpartum headache occurred in 14.5 per cent of all cases.

There were no postspinal neurologic sequelae.

One maternal death occurred in the series due to massive right heart embolism twenty-two hours after delivery. The patient had a superficial thrombophlebitis ante partum.

Supplementary inhalation anesthesia was used in 13.5 per cent of the cases.

Seventy-two and two tenths per cent of all the cases had excellent results. In 20 per cent the results were adequate. There were 6.4 per cent poor results. 8 references.

C. A. H.

RUTH, H. S., AND GROVE, D. D.: *Anesthesiology Today and in the Future.* Hahneman. Monthly **83**: 149–157 (Apr.) 1948.

Anesthesiology, 100 years old in 1946, is a well established specialty today. After a period of enthusiasm following its discovery, there came a phase when its administration was delegated to the youngest and least experienced individual available. Following this came a period in which nurses trained in anesthetic administration were used, thus primarily improving only the art of administration.

The present development was stimulated by the demands of more extensive surgery with greater anatomic and physiologic disturbances resulting therefrom. It is now a combination of art and science.

A few of the functions of the present day anesthesiologist are discussed. Preoperatively the patient is evaluated physically and mentally to determine which agent and technic will give the greatest safety to the patient and best operating conditions for the surgeon. Apprehensive patients give the anesthesiologist more trouble, require larger doses of the agents, and have a less satisfactory anesthesia than the more calm and emotionally stable patients. ". . . Experience has shown that a patient who particularly desires a certain anesthetic agent will do better with