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HISTORICAL PERSPECTIVE OF RECTAL ANALGESIA FOR LABOR AND DELIVERY *Tungpalan, L.A. Mergens, P.A.; Caswell, R.E.; Vasdev, G.M. Anesthesiology, Mayo Clinic, Rochester, MN* Rectal analgesia (PRA) for obstetrics (OB) was developed in the 1920s. This study highlights the contributions to OB and technique of PRA by James Gwathmey MD (JG). Using departmental and Wood Library archives, the development and application of PRA for labor and delivery was determined in the USA. In 1905, Cunningham and Lahey first reported 41 cases of PRA. JG, an anesthesiologist who worked in the New York Lying-in Hospital, became interested in this technique. A demonstration by Prof. G. Bremer (chief surgeon) prompted JG to pursue PRA for OB. He sought the resources of Prof. G. Wallace, New York University College of Medicine, and attempted to refine the technique. Initially, 5% ether in saline was used. This resulted in failure as the ether parted from the saline rapidly resulting in explosive losses. JG then used an oil/ether mixture in a 1:3 ratio. He perfected his technique to administer PRA and published his experience with 20,000 women in 1930. The procedure he used is outlined in Table 1. After the instillation of rectal ether (via McCormicks apparatus), analgesia occurred in 45 minutes and lasted from 2-6 hours. Most multipara required 1-2 instillation. In parturients with a tumultuous labor, amnesia was achieved using pentobarbital 0.1-0.2 gm (not to exceed 0.6 gm). Satisfactory results from this technique were suggested at 85-95% in a letter from Dr. John Lundy to Dr. C. E. Hunt (Eugene, Oregon, 07-22-1925). Analgesia often needed to be supplemented in primiparous women with inhaled ether, nitrous oxide, or cyclopropane. Chloroform was still available, but JG advocated it not be used as part of his "balanced" technique because of significant side effects. Progress of labor was often assessed by rectal examination which often resulted in a loss of colonic content. The popularity of PRA faded as the use of other agents became more prevalent. Demerol, penthrane, and trichloroethylene superseded ether use. The 20,000 cases reported by JG there were no changes in obstetric progress, maternal and fetal outcome. In summary, this review highlights the use of rectal analgesia in OB as performed by JG in the early 20th century. Although there were some limitations, he was able to use it as part of his "balanced" analgesia technique. 85-95% of patients were satisfied with the analgesia with no impact on outcome. 1. *Anesth Intens Care* 27:3, 1999. 2. *Anesth* 5:296-299, 1944. 3. *Anesth* 3:171-175, 1942

Cleansing enema	5-10% solution of sodium bicarbonate (warm water)
Pentobarbital	0.1 gm orally
MgSO4 and morphine sulfate	1 gm (2ml of 50% solution) and 10-15 mg i.m.
Ether oil	75 mls, 45 mls olive or mineral oil
Ether-Paraldehyde-Oil	75 mls, 7.7 mls, 45 mls olive or mineral oil
Rectal ether	Placed by special pressure instillator
Catheter	Placed past the presenting part avoid curling
Instillation of mixture	At the end of a contraction

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TEMPERATURE OF SUFENTANIL INTRATHECAL INJECTATE AFFECTS SPINAL LABOR ANALGESIA *zhu, b. Grodecki, V.; Huffnagle, S.; Huffnagle, J.; Audu, P. Department of Anesthesiology, Thomas Jefferson University Hospital, Philadelphia, PA* **Introduction:** Our prior observation suggested that the temperature of sufentanil intrathecal injectate may affect the onset and duration of spinal labor analgesia (SLA). Prior studies addressing the influence of injectate temperature on spinal anesthesia/analgesia were done with local anesthetic only, the presumed mechanism was change of injectate baricity associated with temperature change. One in-vitro study showed temperature-related changes in opioid-receptor binding profile. A prospective, randomized, patient-blinded study is presented here to determine if the temperature of intrathecal sufentanil injectate affects the onset and duration of SLA and if so, provide evidence for either possible mechanism. **Methods:** Following IRB approval and written informed consent 27 ASA-II women in labor requesting analgesia were enrolled. Labor analgesia was provided using combined spinal epidural (CSE) technique. Spinal injection consisted of 10 mcg of sufentanil diluted into 2 ml total volume in all cases. Patients were randomized into 3 groups: Group 1: sufentanil in normal saline (NS) at 4°C; Group 2: sufentanil in NS at 37°C (hypobaric); Group 3: sufentanil in patient's own CSF aspirated during CSE (body temp, isobaric). Pain was measured with Visual Analog Scale (VAS) immediately before CSE (serve as baseline) and after CSE for 20 minutes with each contraction. Raw VAS scores were standardized so that the baseline score for each patient was 10. Patients were instructed prior to randomization to call for epidural activation when they started to feel contractions and discomfort. Duration of SLA was recorded as time from the spinal injection till epidural activation. **Results:** Significant difference was found in the duration of SLA between group 1 and two remaining groups (53.88 +/- 7.08 min. versus 134.33 +/- 10.69min. and 136.75 +/- 18.48min., p=0.0002). During the 1st 3 minutes after CSE, the VAS score decrease (from baseline 10) is most prominent in group 3 (4.7 +/- 1.2, vs 10.7 +/- 1.6 in group 1 and 12.7 +/- 2.8 in group 2, p=0.0175). There is a general trend that the analgesia onset is slower in group 1. Further data collection is ongoing. **Discussion:** The results suggest that the low temperature of intrathecal sufentanil injectate is associated with shorter duration, and possibly a slower onset, of SLA. Dilution of sufentanil with CSF seems to be associated with the best pain relief during 1st 3 min. after CSE. No significant difference in duration of SLA between groups 2 and 3 was observed. That suggests that the change in opioid receptor binding profile, rather than baricity of injectate, might be the mechanism. 1. *Anaesthesia*, 46:17, 1991 2. *British Journal of Anesthesia*, 59:1459, 1987