TITLE: THE USE OF 28G CONTINUOUS SPINAL CATHETHERS TO ADMINISTER FENTANYL TO MANAGE LABOR PAIN: A DOSE FINDING STUDY

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This study was undertaken to evaluate the use of the 28G continuous spinal catheters (CCS) to administer incremental dosages of fentanyl to manage labor pain.

After institutional approval and patients' consents, 11 parturients were offered the CSC. Fentanyl 5μg/0.5ml was injected intrathecally every 5 minutes until pain relief up to a maximum of 25μg after which bupivacaine was to be used. Pain was evaluated by a blinded observer using an anolg pain score of 1-10 and a discomfort scores of 0-5 prior to and after 5, 10, 20, 30 minutes of the CSC or injection of a medication and every 15 minutes thereafter until delivery. Vital signs, other variables, complications and acceptance of the method were recorded and graded. ANOVA test was used to analyse the data and significance was obtained at $P<0.05$.

None of the patients needed bupivacaine. Two patients delivered after 5 μg fentanyl and 9 patients received another 5 μg after 10 minutes. Fentanyl initial two doses lasted 38 ± 24 minutes. Seven patients had a subsequent dose that lasted 43 ± 20 minutes. Only 3 patients received a 4th dose and one patient a 5th. Mean fentanyl total dose was 16 ± 8μg and duration of labor was 103 ± 99 minutes. Figure 1 shows pain scores and figure 2 shows discomfort scores. Pain relief was associated with a narrow band of segmental hypothesia, grade 2 somnolence and patients oblivious to uterine contractions. There was no signifcant change in blood pressure or pulse rate. Four patients had pitocin, 10 patients delivered vaginally without forceps or vacuum. Analgesia during the 2nd stage of labor was good. One patient had episiotomy without local that was used in 5 patients. One patient had a Cesarean delivery due to fetal distress using the CSC. The apgar scores were 8.89 and 9.58. There was mild abdominal itching in 6 patients. There was no post lumbar puncture headache and the experience received the highest satisfactory rating.

The 28G CSC permitted the use of incremental doses of fentanyl 5μg that was effective in management of labor pain without apparent complications.

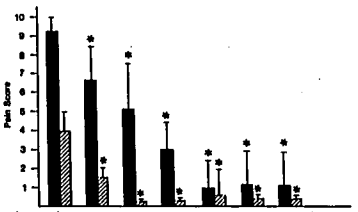
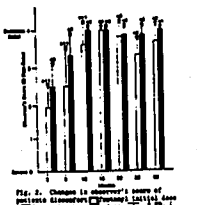


Fig 1. Changes in mean analog pain score ■ fentanyl initial dose, ▨ fentanyl subsequent dose, ⊤⊥ SD. (*) highly significant difference from 0 minutes ($P<0.000$)



TITLE: MATERNAL OBESITY AND HEADACHE FOLLOWING UNEXPECTED DURAL PUNCTURE

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Unexpected dural puncture (UDP) occasionally occurs while attempting lumbar epidural blockade in the parturient. It has been our observation that obese parturients are less likely to develop post-dural puncture headache (PDPH) following UDP than are those of normal weight. To test this hypothesis, we retrospectively analyzed all instances of UDP in parturients following attempted epidural blockade at our institution between the years 1980 and 1989.

Of 3671 epidural anesthetics administered to parturients, there were 47 instances of UDP, an incidence of 1.3%. After review of the 47 cases, 16 were eliminated from the study because the presence and/or severity of PDPH could not be established. The remaining 31 records were then reviewed for maternal height, weight, age, delivery mode, and presence of PDPH. Maternal obesity was determined by calculating body mass index (BMI).[1] A BMI ≥ 30 was classified as morbid obesity. The Fisher's exact test was used to demonstrate the relationship between the incidence of PDPH and the presence or absence of morbid obesity or delivery mode (vaginal delivery or cesarean section). The Student's t- or the Whitney-Mann U- tests were used to analyze demographic differences between groups. Statistical significance was accepted when $p < 0.05$.

There were no differences between the obese and non-obese groups with regard to patient age or delivery mode. Age and delivery mode also had no influence on the incidence of PDPH. There was a 35% incidence of UDP in the obese patients probably reflecting difficulty in identifying the epidural space.

	PDPH - YES	PDPH - NO	TOTAL
BMI < 30 (25.7±0.8)	18 58.06%	2 6.45%	20 64.52%
BMI ≥ 30 (36.0±3.3)	6 19.35%	5 16.13%	11 35.48%
TOTAL	24 72.42%	7 22.58%	31 100%

Statistical analysis showed that parturients with morbid obesity are less likely to develop PDPH following UDP ($p = 0.0239$). Indication for prophylactic or therapeutic autologous epidural blood patch may be less in obese patients with UDP. Only 3 of 6 obese patients with PDPH received therapeutic epidural blood patch as compared to 15 of 18 in the nonobese-PDPH group. This may indicate that the severity of PDPH may be reduced in the morbidly obese parturient. The elevated intra-abdominal pressure may retard the degree of CSF leak through the site of puncture, accounting for the decreased incidence of PDPH in this population. This mechanism may be similar to that of abdominal binders used for symptomatic relief in parturients with PDPH.

References

1. J Chron Dis 25:329, 1972