

Spinal Morphine Injections for Treatment of Post-spinal Headache

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Post-spinal headache (PSH) is still a serious complication of accidental dural puncture in obstetric practice¹. A prophylactic extradural blood patch was suggested², with conflicting results³.

Recently it was described⁴ that epidural morphine injections relieved PSH. It also relieved PSH 5 days after the dural puncture⁵.

A case is reported of a parturient who developed a PSH and responded to repeated morphine 0.5 mg injections through an epidural catheter which inadvertently penetrated the dura.

It is the first report in the literature, to the best of our knowledge, of treatment of post-spinal headache by repeated injections of morphine through an epidural catheter left in the spinal space.

Report of a Case

A 31 year old parturient, at her 41 weeks of gestation, was intended to have a Caesarean section because of preeclampsia (Blood pressure – 150/110 mmHg) with hypereflexia, pitting edema (+3) and proteinuria (+2). A trial of labor was induced six hours ago with insertion of 3 mg of PGE₂

at the posterior fornix, but the cervix remained dilated for only 2 cm. Two weeks before she started to suffer from herpes gestationis which affected her hands and feet. The abdomen and the back were clear from bullae.

Her blood pressure at the operating room was 140/90 mmHg. She got 1 liter of lactated Ringer's solution before starting an epidural anesthesia. Lying on her left side an epidural needle 18G (Portex) was inserted at the L₂₋₃ interspace with loss of resistance technique. Two ml of Bupivacaine 0.5% were injected through the needle after reaching the epidural space. No CSF was seen dropping out of the needle. Then an epidural catheter was inserted and 1 ml of bupivacaine 0.5% injected through it. After 1–2 minutes the patient complained of heaviness in both her legs, and she could hardly lift them. A suspicion of inadvertent spinal was confirmed after another 1–2 minutes after which she could not lift her legs completely. A spinal anesthesia was confirmed until the T₄ level.

Blood pressure dropped to 100/60 mmHg and she got 5 mg of ephedrine and the blood pressure rose to 120/80 mmHg.

Surgery began 5 minutes later. A healthy newborn was delivered five minutes later with an apgar of 9. Aspiration from the epidural catheter revealed CSF. Twenty minutes after the insertion of the epidural catheter

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into the spinal space the parturient complained of aching frontal headache, first on the right half and then on all the frontal area. 0.5 mg of morphine diluted in 1.5 ml of 0.9% NaCl were injected through the epidural catheter into the spinal space. Fifteen minutes later the headache improved on the right half. After 30 minutes from the spinal injection of the 0.5 mg of morphine the headache disappeared from all the frontal area.

In the recovery room the patient complained of abdominal pain. One and a half hours after she got the first spinal morphine she got another injection of 0.5 mg morphine diluted in 1.5 ml of 0.9% NaCl into the spinal space with improvement of the abdominal pain. She also had nausea and vomiting which were treated by I.V. 20 mg of metoclopramide.

Fourteen hours after the second injection of 0.5 mg morphine into the spinal space, the parturient started to have abdominal pain with mild frontal headache. She received another injection of 0.5 mg morphine into the spinal space with relief of the headache and the abdominal pain within 20 min.

After seven days of hospitalization she went home without any return of the post-spinal headache.

Discussion

Post spinal headache was first documented by August Bier in 1898⁶.

Tourtellotte et al.⁷ listed 49 modalities of treatment for PSH, ranging alphabetically from abdominal binder to irradiation of the skull.

Gormley⁸ suggested in 1960 the use of autologous blood injected into the epidural space in the vicinity of the presumed dural hole. However, this mode of therapy necessitates doing another epidural puncture, and failures were also reported⁹.

We currently reported⁴ on six patients (28–70 years old) with post-

spinal headaches in whom total relief of pain was obtained by epidural injections of morphine via an epidural catheter after 24–36 hours from the dural puncture.

Another patient (57 years old) responded to epidural morphine injection five days after the dural puncture⁵. The patient described herein had an epidural catheter in the spinal space which penetrated the dura inadvertently. Based upon our previous experience it was logical to inject the morphine into the spinal space immediately after the PSH developed. The patient responded within 15–30 min. Return of the PSH fourteen hours later was treated again with spinal morphine.

There have been several reports on the successful use of epidural morphine after inadvertent spinal tap to prevent post-spinal headache^{10,11}, but this, to our knowledge, is the first report of the beneficial use of spinal morphine injections after headache had already occurred.

In conclusion, it is logical that after an inadvertent spinal is done with an epidural needle an epidural catheter be left in the spinal space in case PSH will develop and for postoperative analgesia with morphine. This method of treatment can make the epidural blood patch an unnecessary modality.

Further clinical experience has to be gained.

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