

When is a Labor Painless?

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Siriraj Med J 2006; 58: 984-985

E-journal: <http://www.sirirajmedj.com>

If without sufficient pain relief, parturient would experience significant labor pain of extremely severe intensity. Labor pain itself can also have deleterious effects on the mother, fetus or the labor outcomes. Nowadays, it is accepted that epidural analgesia is the most effective method in relieving the severe pain of labor. However, there could be many concerns or questions from patients or even among physicians whether this most effective technique would have any deleterious effects to the mother, newborn or the process of labor.

Labor pain relief: Where are we now?

Although we have many labor pain relief methods, regional analgesia, the most widespread technique being epidural analgesia offers the best effective/ safety ratio.

Epidural analgesia using epidural catheter which local anesthetics infused into the epidural space continuously or intermittently (conventional epidural technique) can give quite enough pain relief as compared with the commonly use systemic opioids such as meperidine. However, combined spinal epidural (CSE) technique, to get more rapid onset from the spinal block, is also a popular technique in some institutes. Short acting opioids such as fentanyl is also added to the local anesthetic, which then lower the concentration of the local anesthetic, can be used with less motor blockage and "walking epidural" during labor was once commercially advertised in the newspaper several years ago.

A more modern but expensive technique, patient controlled epidural analgesia (PCEA) which the patient can put the button to release more local anesthetic by herself, so far does not improve the maternal satisfaction. However, it is claimed that PCEA consumes about 30% less local anesthetic with few differences in motor block, side effects, or obstetric outcomes as compared with the conventional epidural technique.

Does epidural block cause acute or chronic back pain?

This question is often asked by the patient regarding what they have heard. They always connect the epidural block with post partum low back pain caused by pregnancy. Evidences do not support this connection. The relative risk (RR) of epidural block and long term backache is 1.0 with 95% confidential interval, CI (0.89-1.12).

Does epidural block effects the course of labor?

Many obstetricians are concerned that epidural anesthesia might prolong the duration of labor especially the second stage. However, from recent systematic

reviewed studies using multivariate analysis, there was no difference in the duration of the first stage of labor, although the second stage of labor was slightly longer by about 25 minutes in patients having epidural block as compared with patients without epidural block.

Does epidural block increase the rate of cesarean section?

From systematic reviewed studies, comparing between using epidural analgesia for labor and not using it, the overall rate of cesarean delivery and also for dystocia are not different: RR 0.8 (0.6-1.2) and 1.0(0.8-1.4) for overall and for dystocia, respectively.

Does epidural block affect neonatal outcomes?

This is the question that is always asked by the patients concerning the effect of epidural block on their babies. However, evidences from systematic reviewed studies shown that epidural block has no adverse effects on the newborns. Newborns with low Apgar score at 5 min were not different between the groups with and without epidural block with the RR of 0.70 (96% CI 0.44-1.10).

Can the mother "push" her baby out during the second stage of labor while having epidural analgesia?

This question is always asked by medical students in the labor room. At present time, the concentration of the local anesthetic used for labor pain is very low. Bupivacaine in the concentration between 0.0625 - 0.125% can block only the fine nerve fibers such as sympathetic (uterine pain), somatic pain, temperature and hardly blocked larger fibers like touch, proprioceptive, pressure or moter fibers are hardly be blocked with this low concentration, except when it is used too long. The "willing to push" is a perineal pressure stimulated by the fetal head causing a reflex via the vagus, phrenic and the intercostals motor nerves resulting in involuntary contraction of the diaphragm and intercostal muscles.

Does epidural block increase the incidence of instrumental delivery?

Evidences from systematic reviewed studies show that epidural block is associated with a slightly increased risk of instrumental vaginal delivery with a relative risk of 1.38 (95% CI 1.24-1.53).

Does epidural block have any harmful effect on the mother?

- Systematic effects from accidental intravascular injection

While epidural analgesia for labor pain is popular due to its effectiveness in labor pain relief, it is not without risk, although it is rare. From one large study which involved 145,550 epidurals in mothers, the incidence of accidental intravascular injection was 1: 5,000. However, this incidence was only from mild symptoms of toxic reaction such as tinnitus (ringing in the ears), perioral paresthesia, metallic taste or visual disturbance which usually follows the test dose or incremental dose of local anesthetics. Nevertheless, the incidence of the serious symptoms of toxic reactions such as convulsion, loss of consciousness or cardiac arrest was only 1:54,000.

- Accidental intrathecal injection and / or high spinal or total spinal block

The incidence of accidental intrathecal injection was 1:2,900. This incidence was only from using the test dose or incremental dose of local anesthetics causing rapid onset of dense sensory and motor block. While the incidence of high or total spinal block from injection of large dose of local anesthetics into subarachnoid or subdural space was 1:16,200. It was diagnosed in the presence of rapidly progressing motor and sensory block followed by respiratory paralysis requiring intubation, hypotension and loss of consciousness.

Should we concern about neurological complications in using epidural analgesia?

Neurological complications in obstetric regional anesthesia are rare and vary among various reports. The incidence of neurological complications ranges from 2-12 in

10,000 epidural blocks. The common complication is neuropathy (80.9%), followed by cranial nerve palsy (10.6%), epidural abscess (2.1%), epidural hematoma (2.1%), anterior spinal syndrome (2.1%) and cranial subdural hematoma (2.1%). However, almost all neuropathy reports are reversible with very few permanent damages.

CONCLUSION

So far, epidural analgesia is currently the most effective technique in relieving severe labor pain. However, many concerns or questions about its complications are usually raised from both patients and obstetricians. Evidences supported that these complications exist, but they are rare. Careful discussion with the patients and careful practices in the use of epidural anesthesia to prevent serious complications are essential for anesthesiologists.

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