
Intentional Unilateral Epidural Block for Surgery in a Pregnant Patient

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Abstract

Unilateral epidural block often results inadvertently during routine epidurals. It can however be used intentionally to provide analgesia selectively to the limb being operated. We present an application of this approach used to provide surgical anaesthesia and postoperative analgesia to a patient who sustained fracture of her right femur during second trimester of pregnancy and required open reduction.

Case Report

A 37 year old woman presented to our hospital with fracture of the right femur following trauma and was scheduled for open reduction and internal fixation with an intra-medullary nail. She was pregnant at 24 weeks gestation by dates. A review of her medical history and systemic examination was otherwise unremarkable and baseline laboratory work-up was essentially normal. Informed consent for surgery was obtained and anaesthetic risks explained to the patient including the possibility of pregnancy loss. The various anaesthetic options were discussed with the patient and orthopaedic team and an epidural block was agreed upon.

She was preloaded with 1 litre of 0.9% saline and standard monitoring commenced. Under sterile conditions and after infiltration of the skin with 2% lidocaine with the patient seated, a 17G Tuohy needle was introduced into the L3-4 interspace in the midline. Needle entry into the epidural space was confirmed by loss of resistance to saline using loss-of-resistance glass syringe. The bevel of the needle was then turned about 45 degrees to the right side and the epidural catheter inserted to 4cm beyond the needle tip. A test dose of 2mls 2%

lidocaine with epinephrine was injected through the catheter and a further 3mls of the solution added. A sensory block level was achieved at T7 on the right side within ten minutes whereas the left side was largely unaffected. The patient was positioned supine with a left uterine displacement to minimize aorto-caval compression.

Surgery proceeded uneventfully and top-ups with 5mls of lignocaine were done twice during the surgery which lasted about 90minutes. A cumulative intravenous ephedrine dose of 10mg was used intraoperatively to maintain the blood pressure within normal after an initial drop from 123/76 mmHg to 98/60 mmHg. The epidural catheter was left in situ for 24 hours and used to administer morphine for immediate postoperative analgesia.

Discussion

Unlike spinal anesthesia, the distribution of epidural block cannot be controlled with gravity and patient position. Development of a one-side block may occur after the placement of an epidural catheter (1,2). However, producing a preferential distribution of the epidural block toward the operative side may have potential advantages in patients undergoing unilateral surgery on the lower limb. This can be achieved through manipulation of the epidural needle to direct the local analgesic solution to the required side (1-3). Buchheit and Crews described a technique to intentionally direct the epidural catheter toward the operative side by turning the bevel of the Tuohy introducer needle toward the surgical side to produce an intended unilateral cervical epidural block for unilateral acute and chronic painful conditions involving the upper limb(3).

Epidural anaesthesia and analgesia (EDA)

remains a leading technique for perioperative pain management in numerous surgical indications. As an invasive technique, the benefit/risk ratio deserve to be appraised in order to help the physicians to make the appropriate choice among other opportunities (general anaesthesia, peripheral nerve blocks, wound infiltrations), and to provide objective information to the patients before their consent is obtained (4).

The need for anesthesia and surgery during pregnancy occurs in 1.5% to 2.0% of all pregnancies. The diagnosis of any condition requiring surgical intervention in pregnancy often raises questions about the safety of both surgery and anesthesia in these patients. Despite these concerns, the safety of non-obstetric surgery and anaesthesia in pregnancy is well-documented for nearly every operative procedure (5). Deciding the best anaesthetic for these however remains a challenge.

It has been suggested that elective surgery in pregnant patients should be deferred until after delivery. However, emergency cases should proceed with optimal anaesthetic for mother modified by considerations for maternal physiologic changes and fetal well being (6,7).

References

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