

Lumbar Epidural Catheterization in Prone position for post operative analgesia

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ABSTRACT

Epidural analgesia (EA) is an extensively used procedure for many surgeries. It is utilized for post operative analgesia as well as to control hypertension in a case of PCNL (Per Cutaneous Nephro Lithostomy). The technique was done in prone position while the patient was under general anaesthesia i.e; at the end of surgery.

Key words: prone, lumbar epidural, pain relief

INTRODUCTION

Epidural analgesia (EA) is being used widely and successfully as primary mode of anaesthesia and for post operative analgesia. The technique offers many advantages, such as improved cardiopulmonary function, decreased incidence of deep vein thrombosis, improved postoperative gut function, better mobilization and less systemic analgesics.

CASE REPORT

A 52 year old male, weighing 82 kgs with history of hypertension under treatment was posted for PCNL; there were no other co-morbidities. All the routine investigations (including CXR, ECG and 2D-ECHO) were within normal limits. His BP on the day of surgery was 195/120 mm of Hg. Pre medication was done with Inj. Midazolam 2mg IV, and Cap. Nifedepine 10 mg sublingual to control BP. When it settled at 140/90 mm of Hg, he patient was shifted to the operation theatre. Inj. Lignocaine 100mg IV was given and general anaesthesia was administered with Inj. Morphine 6mg, Inj. Glycopyrolate 0.2mg IV, Inj. Thiopentone 350 mg, and Intubated under Inj. Succinyl choline 100 mg with Armoured tube of 8.0 ID, after spraying the vocal cords with 4% lignocaine. Intra operative condition of the patient was uneventful and parameters were within normal limits.

At completion of surgery, in the same prone position, epidural catheterization was done while the patient was under general anaesthesia, because we thought it would be difficult to position the patient in lateral decubitus after recovery from anaesthesia as the patient was obese and may be uncooperative due to the post anaesthetic effects.

Lumbar epidural was done under LOR technique, using 18G Tuohy's needle and 19G catheter in Lumbar 2-3 spaces, and threaded cephalad.

Identifying midline is important otherwise it will be difficult to locate the epidural space. In the lumbar area, the depth of skin to ligamentum flavum is approximately 4 cm for most adults. The average thickness of the ligamentum flavum is 5-6 mm. Controlling the needle is important to avoid a dural puncture.

Loss of resistance technique: once the needle is placed into the ligamentum flavum, the stylet was removed. A disposable syringe was attached with 3 ml of normal saline and a small (0.25 ml) air bubble. The needle was held steady by the non-dominant hand. The dominant hand held the syringe. Steady pressure was applied to the plunger to compress the air bubble. Slowly and steadily the needle was advanced until the loss of resistance was noted. 2 ml of distilled water was injected through the needle to facilitate easy insertion of catheter. 3 cm of catheter was inserted into the epidural space in the cephalic direction. A test dose of 3ml of 1.5% preservative free lignocaine was given after insertion of catheter. A bolus dose of 4 ml containing 0.125% Bupivacaine with 0.25% Morphine was given and repeated every 6th hourly. Analgesia was adequate and VAS score was 2-3. Monitoring was done continuously for the next 48 hours and the parameters were within normal limits. As Catheter migration may occur at any time, which can lead to an intravascular or intrathecal injection, aspiration was done before each top-up injections.

DISCUSSION

Despite improvements in perioperative care, major surgical operations are still followed by sequelae such as pain, organ dysfunction and prolonged convalescence. It has been assumed that sufficient pain relief will improve the surgical outcome with reduced morbidity, hospital stay and convalescence. Among the most commonly used pain relieving techniques (patient controlled analgesia(PCA)with opioids , non steroidal anti inflammatory drugs (NSAIDS) and epidural analgesic techniques.), there is evidence that the epidural local anaesthetic or local anaesthetic opioid techniques are the most effective on providing dynamic pain relief after major surgical procedures.^{1,2}

It has been hypothesized that a reduction in the surgical stress responses (endocrine, metabolic and inflammatory) will lead to a reduced incidence of postoperative organ dysfunction and thereby to an improved outcome.³ Only regional anaesthetic techniques, and preferably continuous techniques with local anaesthetic, may lead to a substantial reduction in the surgical stress response.⁴ The duration of epidural local anaesthetic analgesia is

important; it should be at least 24 hours and preferably 48hours.⁴

Central neuraxial blockade reduces the risk of deep venous thrombosis , pulmonary embolism , transfusion requirements, pneumonia , respiratory depression and myocardial infarction.

CONCLUSION

Post operative pain relief by neuraxial techniques are better than systemic opioids and NSAIDS , therefore the technique of epidural analgesia was preferred in this case.

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