

Accidental injection of lignocaine with adrenaline in subarachnoid space: a case report

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ABSTRACT

Drug errors are very common in medical field especially in anaesthesia where it's the game of drugs. Here, we are presenting a case in which accidentally we injected lignocaine with adrenaline in place of heavy bupivacaine. Patient was of geriatric age group and posted for lower limb surgery under combined spinal epidural anaesthesia after placement of epidural catheter lumbar puncture was done and 3ml of lignocaine with adrenaline was injected. After this patient develop complete sensory, motor blockade with hypotension. Level of block was up to T12 level patient was monitored for signs and symptoms of ransient neurologic syndrome (TNS) and anterior spinal artery syndrome for 24 hours. After 24 hours patient develop no complications and posted for surgery under general anaesthesia.so we have to be very careful about the labelling of drugs.

Keywords: Lignocaine, Adrenaline, Subarachnoid space

INTRODUCTION

Anaesthesia is a dynamic system in which there is interaction between man, machine and the environment. Failures or errors can occur in any of the components of this system. A simple single mistake of any of these parts can lead to a big complication. Medication errors are common throughout healthcare and result in significant human and financial cost.¹

Since the introduction of spinal anaesthesia by August bier a lot of local anaesthetic preparations come in to use. It's a controversial topic that should we use lignocaine

with adrenaline or not for subarachnoid block. We report here a case of inadvertent injection of vasoconstrictor-containing local anaesthetic agent into the subarachnoid space during spinal anaesthesia.

CASE REPORT

A 70 year old Indian male patient was planned for femur nailing under combined spinal epidural anaesthesia. Anaesthesiologist loaded 3 ml of lignocaine with adrenaline for test dose in 5 ml syringe; another 5 ml syringe contained 3 ml of hyperbaric bupivacaine. Both the syringes were kept separately on right and left side to distinguish. After preparation of the skin and draping,

local infiltration of the skin and subcutaneous tissue was done with 2 ml of lignocaine with adrenaline by 2 ml syringe. Epidural catheter placed and checked. After this lumbar puncture was performed in the sitting at the level of L4 at a depth of approximately 4 cm. 3 ml of lignocaine with adrenaline was inadvertently injected into the subarachnoid space. The mistake was realised on seeing the unused syringe containing the bupivacaine on left side. The patient was positioned supine with head elevated and observed. After 3 minutes of injection patient developed complete sensory and motor block. After 10 min patient developed hypotension which was corrected by mephentramine. The operation was postponed. The patient had analgesia up to the level of T 12'. This lasted for two hours. His vital signs were stable. Complete neurological examination was done subsequently at 9 and 24 hours after the injection. Signs and symptoms of anterior spinal artery syndrome and cauda equina syndrome were particularly looked for and they were not present. Subsequently the patient was operated on under general anaesthesia

DISCUSSION

According to Glavin, drug errors in anaesthesia are common but resulting serious adverse outcomes are rare.¹ Here fortunately the patient didn't develop any complications to lignocaine with adrenaline.

This patient received a total dose of 64.8 mg lignocaine with 15 micrograms of adrenalin in 1:200,000 dilution. Moore and Bridenbaugh have reported that injection of solutions containing epinephrine 0.2 mg in 0.2 ml.² (1:1000) added to the local anaesthetic solution do not result in systemic toxic reaction or in damage to the normal spinal cord. But prolonged spinal block followed by muscular weakness of the lower limbs and occasional impotence have been observed by them.

Lignocaine is associated with more hemodynamic changes if given in subarachnoid as compared to bupivacaine, but this hemodynamics changes are correctable and doesn't remain for a longer period.³ There are several studies suggested the use of lignocaine in subarachnoid space. Imbelloni et al studied 250 patients scheduled for different orthopedic surgeries were submitted to spinal anaesthesia, with 60 mg (3 ml) of plain 2% lidocaine.⁴ And they find isobaric lidocaine, in a fixed dose produce effective spinal anaesthesia, with good cardio circulatory stability, low TNS incidence. Here the other concern was adrenaline which leads to vasoconstriction of the arteries supplying the spinal cord can lead to ischaemia and hypoxia of the cord with resultant neurological damage.⁵ Also those who used vasoconstrictor drugs in spinal space could not agree among the various vasoconstrictors which is the most effective potentiator of spinal block.

This isobaric lignocaine less influenced by posture than are hyperbaric solutions. Isobaric solutions seem to produce a consistent level of analgesia and a more potent motor block than hyperbaric solutions.^{6,7}

Thus in order to prevent this type of future mistakes it is better to load drugs in syringes before their use, or load them in different volume syringes so that they can be marked.

CONCLUSION

We would like to suggest some precautions, avoid all adrenalin-containing local anaesthetics in spinal block, load the drug before their use, Specific syringes to distinguish and always discard the remaining anaesthetic solution in the syringe after skin infiltration.

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