



MEDICATION ERROR : ACCIDENTAL INTRATHECAL INJECTION OF PHENYTOIN- A CASE REPORT

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ABSTRACT Medication error is a matter of increasing concern in anaesthesiology. We are reporting a case of accidental injection of phenytoin (3ml of 250mg/5ml) instead of bupivacaine in a young female posted for caesarean section under spinal anaesthesia. When no sensory or motor block was achieved, the mistake in giving the wrong drug was detected and the case was done under general anaesthesia uneventfully and healthy male baby was delivered without any post-operative complication. It was seen that 3 ml of phenytoin (Phentolep 250 mg/5ml) was wrongly loaded in the syringe by anaesthetist assuming it to be 0.5% hyperbaric bupivacaine and injected intrathecally. Patient was followed for five post-operative days and discharged on 5th post-operative day without any complications. It was concluded that before administration of any drug, the drug labels should be carefully checked to avoid medication errors from look-alike ampoules.

KEYWORDS : Medication, Error, Accident, Spinal Anaesthesia, Phenytoin.

INTRODUCTION:

Spinal anaesthesia is considered as one of the reliable methods of block but there is a possibility of failure as well¹. This type of anaesthesia is routinely used for many surgical procedures. Accidental injection of wrong drug into the subarachnoid space may be catastrophic. Errors usually pertain to the type of the drug administered, rate of the administration and site of the administration. These accidents of injecting a wrong drug into the spinal canal date back to the year 1899². Spinal anaesthesia is in fact now the method of choice for a Cesarean section³. In this case report we report an accidental injection of phenytoin intrathecally instead of hyperbaric bupivacaine for spinal anaesthesia due to confusion between the two look alike ampoules.

CASE REPORT:

A 30 year old female (weight.60 kilograms) ASA 2 was scheduled for emergency caesarean section. There was no significant past medical history. Physical examination and biochemical tests were normal. We planned spinal anaesthesia for her operation. After transporting her to the operating room, the intravenous line was accessed with 18G angiocath and the patient was preloaded with 1000 ml of Ringer Lactate. The ECG, heart rate, NIBP, SpO2 were measured using standard anaesthesia monitors. Mean arterial pressure (MAP) and heart rate were 90 mmHg and 95/min respectively. After explaining the procedure to the patient, under all aseptic precautions, the 25G spinal needle was introduced into the subarachnoid space at L3-L4 interspace using the median approach and the appearance of CSF through the needle was confirmed. The drug mistakenly containing 3 ml of Phenytoin (250 mg/5ml) rather than 0.5 % hyperbaric bupivacaine was drawn into the syringe and injected into the subarachnoid space.

The patient was placed in the supine position with slight head up position and observed for the development of sensory/motor block. After 10 minutes of the injection no sensory or motor block was achieved as assessed by pin prick test.

It was noticed that wrong drug has been injected as empty ampoule of Phenytoin (Phentolep 250 mg/5ml) was found on the spinal trolley.

Apart from numbness in both the lower limbs, patient remained conscious and maintained her respiration and haemodynamics. The patient was observed for any untoward sign and symptoms for the next 15 minutes and at that time all the clinical signs remained normal.

At this time we decided to proceed with the general anaesthesia. Induction of anaesthesia was done by propofol 140 mg and succinylcholine 100mg and trachea intubated with 6.5 mm id endotracheal tube. After the delivery of healthy male baby, anaesthesia

was maintained by atracurium 25mg, O₂ and N₂O (50%) and fentanyl 100mcg respectively. The intraoperative course went uneventful and all the vital signs remained stable.

At the end of the procedure, the patients' neuromuscular status was assessed using TOF ratio. When 80% of TOF was achieved, the neuromuscular blockade was reversed using neostigmine 2.5 mg and atropine 1mg and trachea extubated.

The patient was shifted to the recovery room and observed for any untoward signs and symptoms.

DISCUSSION:

Drug error case reporting during anaesthesia often goes underappreciated; and administration of a wrong medication during spinal anaesthesia can have a very bad results⁴. Contributing factors leading to mistake in the administration of a drug include drug labelling, appearance and shape, place of medication ampoules, poor or communication lag, careless attitude and tired or exhausted staff involved in the procedure⁵. In this case report wrong drug was injected intrathecally due to the similar appearance of two look alike ampoules. This illustrates the importance of double checking to reduce such errors.

There are several reports of accidental injection of various drugs into the subarachnoid space. For example accidental injection of tranexamic acid instead of bupivacaine leading to convulsions^{6,7}. The effect of direct injection of Phenytoin intrathecally is unknown but studies suggest that phenytoin is inert when injected into CNS.

Phenytoin is an anticonvulsant and is believed to protect against seizures by causing voltage dependent block of voltage gated sodium channels. It is usually used to treat tonic-clonic or partial seizures. The primary site of action which is inhibitory in nature appears to be the motor cortex⁸.

The effect of continuous intraventricular infusion of phenytoin in animals have been studied in the past by Martinaz B (PubMed 1991). The study suggested that intrathecal or intraventricular infusion of phenytoin was well tolerated upto dose of 3mg/day. Toxic effects consists of severe unsteadiness and muscular rigidity. In our patient no neuromuscular manifestations were noticed.

CONCLUSION:

In the present case, the accidental intrathecal injection of phenytoin was safe and no untoward neuromuscular effect, haemodynamic changes were observed in our patient.

FOOTNOTES**Source of support:** Nil**Conflict of Interest:** None declared.**REFERENCES:**

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