



MENINGITIS AFTER SUB ARACHNOID BLOCK :ITS NOT THAT UNCOMMON!!

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ABSTRACT Spinal Anaesthesia or Sub Arachnoid block is the commonest kind of anaesthesia given for surgeries below the umbilicus and lower limb surgeries. Meningitis should always be considered as a differential diagnosis in patients having post spinal headache, convulsions and changes in mental status. The procedure is done following strict aseptic precautions. Despite taking all precautions there can still be a rare possibility of iatrogenic meningitis due to the spinal anaesthesia. Sources of infection include contaminated spinal trays and medication, patient infection, and oral flora from anyone behind the patient without a facemask on. Povidone-iodine solution is most commonly chosen for skin antiseptics before initiation of epidural and spinal anaesthesia. We report a case of chemical meningitis, which developed within few hours after subarachnoid block probably by hyperbaric bupivacaine, injected in the subarachnoid space. CSF pattern was suggestive of chemical meningitis. Patient recovered in 72 hours without any neurological sequelae.

KEYWORDS : Meningitis; asepsis; iatrogenic; bupivacaine; subarachnoid; cerebrospinal fluid

INTRODUCTION

Iatrogenic meningitis is a serious complication following spinal anaesthesia.¹ Despite thorough knowledge and practice of asepsis, meningitis may occur.¹⁻³ It becomes mandatory for the anaesthesiologist conducting these blocks to be familiar with all the possible sources of contamination and adopt all-out measures to prevent them.

We report a case of aseptic meningitis which developed few hours after subarachnoid block.

CASE REPORT

A 29 year male, was scheduled for elective varicocelelectomy. He was accepted in ASA physical status I and had no localized or systemic infection. A written informed consent for spinal anaesthesia was taken. In operating room, intravenous access taken and all routine monitors were attached.

The patient was made to sit on OT table and skin of lumbar area painted with 10 % povidone iodine. Using all aseptic precautions, local infiltration of skin was done with 2 ml of lignocaine (2%) and a 26G disposable Quinke spinal needle (BD™) inserted at the L3–L4 spinal interspace. After confirming the free flow of cerebrospinal fluid (CSF), 3 ml of hyperbaric bupivacaine (0.5%) was deposited in subarachnoid space. Patient was repositioned supine and after confirmation of sensory block till T-10 dermatome level, the surgery was commenced. Patient had uneventful surgery which lasted for one hour. Thereafter the patient was shifted to post anaesthesia care unit (PACU) and later to the ward.

Around three hours after being shifted to the ward the nursing staff found him to be agitated, irritable, somnolent and confused. He had high pressure headache, nausea, neck pain and photophobia. Immediately the attending surgeon and anaesthesiologists were informed.

Initially he was managed as a case of Post Dural puncture headache with iv fluids, caffeine & NSAIDs. He had minimal relief but developed neck rigidity without any focal neurological deficits. Provisional diagnosis of meningitis was made and empirical antibiotics (inj. ceftriaxone 2g IV q 12 hours) were started immediately. Various biochemical parameters & fundus examinations were within normal limits.

The diagnostic lumbar puncture showed clear appearing CSF with protein: 120 mg/100 ml, glucose: 53 mg/100 ml, leucocytes: 560/mm³ (neutrophils 85%, lymphocytes 15%). It was negative for acid-fast bacilli (AFB) and gram stain bacteria. Computerized tomography (CT) and magnetic resonance imaging (MRI) scan of the head and lumbar spine were normal.

Patient was continued on same management and became afebrile, conscious, oriented with no neurological deficit after 48 hours. Meanwhile, the culture reports of CSF, blood and urine were found negative for any growth of bacterial pathogens. Antibiotics were

discontinued after 72 hours. Thereafter, he remained clinically stable with no neurological deficit and was discharged from hospital on 5th postoperative day.

DISCUSSION

In spite of taking all aseptic precautions, there remains a possibility of meningitis following spinal anaesthesia. Post-spinal meningitis should be suspected in patients having headache, altered sensorium and/or convulsions following surgery under spinal anaesthesia.^{4,5} The cause could be any of the following, viz asymptomatic bacteremia, failure of aseptic techniques, contamination during puncture through microscopic bleeding or aseptic chemical meningitis.^{1,6,7} Aseptic meningitis is an inflammation of the meninges due to viral infection or chemical irritation, and has acute onset with clinical symptoms mimicking septic meningitis.⁸ Aseptic meningitis has also been attributed to various agents contaminating the subarachnoid space, such as scrub solutions, surgical glove powder, bits of cotton of wrapped syringes, blood or other body proteins or rarely by anesthetic drugs and equipments.⁸⁻¹⁰ The pathogenesis of drug-induced aseptic meningitis include immunological hypersensitivity (Type 3 or Type 4) to the offending drug or direct irritation of meninges. The symptoms of drug-induced aseptic meningitis resolve quickly whereas recovery in viral meningitis, usually requires 10 to 14 days.⁸⁻¹⁰

Aseptic meningitis presents within 24 hours after dural puncture and is characterized by fever, vomiting, nuchal rigidity, headache, and photophobia. The diagnosis is confirmed by typical CSF profile revealing normal glucose & protein, polymorphonuclear leukocytosis and negative bacterial CSF cultures. The management is usually symptomatic.^{1,3,4,10}

Our patient complained of headache within few hours of completion of surgery which was soon followed by fever, vomiting, photophobia and neck stiffness. We used 26 gauge spinal needle and successful lumbar puncture on first attempt virtually rules out the possibility of low-pressure headache. Blood and its contamination of spinal needle contributing to aseptic meningitis were unlikely cause, as lumbar puncture was smooth & atraumatic and accomplished under strict aseptic precautions. We precluded the possibility of contamination by the hyperbaric bupivacaine injected in the subarachnoid space since the pre-sterilized ampoules of drugs were used within the stipulated time of manufacturing date. Surprisingly, we observed that the same batch number of the aforesaid drug was used before for subarachnoid blocks in our institute with no untoward incident or complications.

Based on CSF biochemistry, lack of organisms in CSF, lack of positive blood or CSF culture and rapid clinical recovery we concluded that our patient suffered from aseptic post-spinal meningitis caused by probable direct drug induced meningeal irritation. This patient was discharged in stable clinical condition after 5 days of conservative management.

CONCLUSION

We share this case report to caution the anesthesia care providers about the possibility of this rare complication with 0.5%Bupivacaine, which

is the most commonly used drug used for subarachnoid block.

CONSENT

Written informed consent was obtained from the NOK of patient for publication of this manuscript and accompanying images. A copy of the written consent is available .

COMPETING INTERESTS

The authors declare that they have no competing interests.

AUTHORS' CONTRIBUTION

AS and AG performed the clinical examination and interpreted the diagnostic findings. Conception and discussion was performed by NSL. The main writing was done by AG. All authors read and approved the final manuscript.

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