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Case Report

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SEIZURE AND SUDDEN COLLAPSE IN A PATIENT FOLLOWING INTERSCALENE APPROACH TO BRACHIAL PLEXUS BLOCK: CASE REPORT

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ABSTRACT

Regional anaesthesia techniques are considered safe as compared to general anaesthesia. But it should be remembered that no procedure is entirely safe and sometimes it may endanger life. Here we are presenting a case of patient on brachial plexus block who develop seizure and sudden collapse and require urgent resuscitation.

KEY WORDS- brachial plexus block, interscalene block, xylocaine, regional anaesthesia.

INTRODUCTION

Brachial plexus blocks are regional anaesthesia techniques that are employed as an alternative to general anaesthesia for surgery of the shoulder, arm, forearm, wrist and hand. It involves the injection of local anaesthetic agents in close proximity to the brachial plexus, temporarily blocking the sensation and ability to move the upper extremity. Whenever possible regional anaesthesia are preferred over general anaesthesia due to increasing cost of anaesthetic agents, associated sequel, problem of operation theatre pollution.[1] Moreover postoperative pain relief is an added advantage. There are various techniques depending on the position of needle or catheter inserted for injecting the local anaesthetic — interscalene block on the neck, supraclavicular block immediately above the clavicle, infraclavicular block below the clavicle and axillary block in the axilla (armpit).[2] Interscalene approach to the brachial

plexus is utilised commonly for procedures performed on or near the shoulder joint and arm.[3]

CASE REPORT

our patient was 92 yr old female who was fallen in her home and presented to us with pain, swelling, decreased motion of hand. On X ray A-P view fracture of proximal end of humerus was evident. No systemic abnormality was documented on history and examination and investigations otherwise were in the normal limit. So closed fixation by nail at proximal humerus was planned. It was decided to perform the surgery under interscalene approach to brachial plexus block with diluted xylocaine and ropivacaine. The right side of the neck was prepared and draped in a sterile manner. An interscalene brachial plexus block was performed. Aspiration before, during, and after injection revealed no blood or cerebrospinal fluid. The patient developed faint seizure, heart rate started decreasing, became unconscious. The patient was given injection atropine 0.6 mg iv and intubated immediately, and positive pressure ventilation was instituted. Midazolam 2 mg iv was provided with intubation. Patient's heart rate rose and settled in the normal range for the remainder of the procedure. Her vital signs remained stable otherwise throughout the rest of surgery; no further arrhythmia was documented. By the time the surgical procedure was finished, the patient was awake and fully following verbal commands and was extubated. Detailed examination of the patient in postoperative, and a day later, failed to reveal any persistent neurological deficit. The patient was discharged after 7 days.

DISCUSSION

Interscalene brachial plexus block is a safe and effective method with advantages includes less nonsurgical intraoperative time, shorter stay in the postanaesthesia care unit, fewer hospital admissions and less intraoperative blood loss.[4, 5, 6, 7, 8] Performance of interscalene block with a standard technique and drug application is associated with a high success rate and with very few long-term complications. Previous reports have described complications from ISB, including neurologic events such as brachial plexus neuritis[9], complete and partial brachial plexus palsy or nerve injury[10,11], prolonged Horner's syndrome[12] (ipsilateral cervical sympathetic block), prolonged recurrent laryngeal nerve palsy, complex regional pain syndrome[13], and auditory disturbances.[14] Respiratory events including pneumothorax[15], phrenic nerve palsy, bronchospasm, and reduction of pulmonary function tests have also been reported, as have CNS complications such as central blocks, permanent

spinal cord injury[16], and seizures.[17] Cardiovascular complications, such as myocardial infarction, have been reported, as well as profound hypotension and bradycardia, which have been attributed to the Bezold-Jarisch reflex. Local anesthetic toxicity can cause complications of CNS and cardiovascular function, including seizures, myocardial infarction, and arrhythmias. Interscalene approach to brachial plexus was suitable for her, as the surgery involved working on and in close proximity with the shoulder joint. Intravascular injection of local anaesthetic agent may occur especially when the needle direction is anterior, as it may enter the vertebral artery and then the injection of local anaesthetic will lead to immediate convulsions even with newer relatively safer drugs. An inadvertent intravascular injection may occur despite a negative aspiration test and negative result for test dose, as in the case of injection of drug in a minor vein or due to intravascular migration of drug, leading to toxicity of local anaesthetic agent which we think occur in our case where though the aspiration test was negative but intravascular migration of drugs occur resulting in seizure, collapse. So wherever possible, ideally, one should go for an incremental injection technique, with sufficient time delay allowed between the doses so as to avoid this potential hazard even with the safer of newer drugs.[18] Following precautions are observed while performing interscalene block, then the complications associated with it can be minimised.[19]

1. Always perform the block on an awake patient or patient under very light sedation <ramsay 3.
2. Any increase in pain, especially severe pain, should warn the anaesthetist of an intraneural injection and the adjustment in needle position should be made accordingly.
3. Avoid performing the block in an uncomfortable non-cooperative patient. General anaesthesia can be the alternative anaesthetic technique in these patients and then other approaches for postoperative analgesia can be adopted.
4. Always use a short bevelled needle ~25– 35 mm in size, as most of the complications associated with block are encountered when one probes deeper for locating the brachial plexus.
5. Needle should be entered in the interscalene groove with a posteroinferior direction.
6. As interscalene block is a superficial block, inability to localise brachial plexus at 1–1.5” should prompt one that the needle may be in wrong plane and one should withdraw and re-enter rather than going more deep.

7. Each patient before undergoing interscalene block must be evaluated for the status of contralateral phrenic and recurrent laryngeal nerve function and if suspected should have a proper ENT examination.
8. Successful initiation of block and surgery does not guarantee outcome, as late complications can occur and constant vigilance and management of respiratory and circulatory system are mandatory.
9. There should be greater education and training for the nerve blocks to the trainee anaesthetist so that persons experienced in its performance are doing it, because complications are less in informed and experienced hands.
10. The greater use of ultrasonographic guidance may further increase the safety of procedure.
11. The physician should ensure that the patient does not move unexpectedly during the procedure and be prepared for it.

CONCLUSION

We all are aware that no procedure is absolutely safe and adequate for all patients, and interscalene approach to brachial plexus block is not an exception. Patients, surgeons, and anesthesiologists must all be aware of the possible complications, understanding that the factors determining the magnitude of the risk for these complications may vary widely among institutions, among anesthesiologists, and among groups of patient, and above all of these availability of emergency tray must be in OT.

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