

Taylor’s Approach/Modified paramedian approach a game changer in unanticipated difficult spine during the era of Covid pandemic - A Case Report

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Abstract

Subarachnoid blockade is widely used due to its procedural simplicity, low cost and better physiological benefits and thus reduced complications than that of general anaesthesia. Subarachnoid block can be safely administered via Taylor’s approach for anticipated as well as unanticipated difficult spine cases when general anaesthesia has to be avoided as far as possible to prevent aerosol generation during era of covid pandemic.

We report a case which was of an unanticipated difficult spine for total abdominal hysterectomy by subarachnoid blockade using Taylor's approach. Spinal anaesthesia is a commonly used technique, either on its own or in combination with sedation or epidural anaesthesia. Most commonly used for surgeries below the umbilicus, but its uses have extended to some

surgeries above the umbilicus as well as for postoperative analgesia.

Keywords Subarachnoid block, spinal anaesthesia, Taylor’s approach, Vitiligo

Introduction

Spinal anaesthesia (Sub arachnoid block: SAB), has a great impact on modern-day surgery. In lower abdominal and lower limb surgery SAB is widely used. It offers several advantages over general anaesthesia (GA) like faster onset, intense motor block, ease of technique, avoid polypharmacy. However, there are several absolute and relative contraindications to perform SAB. Subarachnoid space can be approached from the posterior aspect of the vertebral body either through the midline or paramedian approach (PMA). Accurate identification of the subarachnoid space is paramount as multiple attempts at needle insertion may cause patient discomfort, higher incidence of spinal

hematoma, trauma to the neural structures and PDPH . The most commonly practiced technique is the midline approach . This approach is technically difficult in the geriatric patients because of degenerative changes in the spine. Calcification of supraspinous and interspinous ligaments in the geriatric age group makes midline approach difficult. Paramedian approach is not routinely practiced and is used only when midline approach has failed or is not possible due to anatomical variations like ankylosing spondylitis.

Case Report

We are reporting a case of a 65-years old female patient of average built (weight 62 kg, height 162 cm) , known case of vitiligo and bronchial asthma posted for total abdominal hysterectomy .No history of other major illness and surgery.On examination the patient had adequate mouth opening and airway examination revealed an anticipated difficult airway with buck tooth, Mallampatti class 3,short neck and with normal temperomandibular joint movement. Examination of spine was within normal. Airentry was equal on both sides. Blood investigations were normal. Chest Xray revealed cardiomegaly . All other system examinations were normal considering the patient's concern to avoid general anaesthesia, we decided to avoid GA and give a trial of spinal anesthesia. However, we informed the patient about chance of failure of technique and possibility of conversion to GA

On Previous day of surgery A written informed consent for planned procedure(Total abdominal hysterectomy) under regional anaesthesia as well as consent to revert to general anaesthesia if needed was obtained

Overnight fasting advice along with T. Ranitidine 150mg was advised on night before and on the morning of surgery.

On the day of surgery OT including Anaesthesia machine, difficult airway cart and emergency drugs were checked and kept ready.

Preinduction monitors like E.C.G, Noninvasive blood pressure monitor, pulse oximetry, skin temperature were connected.

After receiving the patient to the OT we secured two wide bore cannulae and started intravenously balanced salt solution. Positioned the patient in left lateral position for lumbar subarachnoid block under strict asepsis.

Inspite of adequate interspinous space negotiating a 25G Quincke's spinal needle was difficult and needle was hitting bone in midline as well as in paramedian approach. Hence considering the prevailing Covid pandemic and to avoid general anaesthesia for the patient we reassured the patient and reverted the patient to sitting position for a modified paramedian approach "Taylor's Approach" of subarachnoid blockade.

Taylor's approach attempted under strict asepsis with 25G Quincke spinal needle. Posterior superior iliac spine (PSIS) palpated, 1cm medial and 1cm caudal to PSIS needle inserted and directed towards cephalo-medial direction. After advancing needle bony obstruction was felt. Walking over the bone "loss of resistance" was elicited and stylet removed. Position of needle tip in subarachnoid space confirmed by clear and free backflow of cerebrospinal fluid. Three ml of hyperbaric Bupivacaine 0.5% was injected. Patient was positioned supine after injection. Level of blockade was checked and found adequate. The surgery lasted for 50 minutes. Intra-operative and post-operative periods were otherwise uneventful.

Discussion

SAB is preferred by many anesthesiologists in view of cost effectiveness, low risk of cognitive dysfunction,

thrombo-embolic events, post-operative respiratory morbidity, renal failure and prolonged post-operative hospital stay.

For a successful SAB surface anatomy and palpation of spinous process, interspaces are important. In some clinical scenario like ankylosing spondylosis, kyphoscoliosis, previous spine surgery, it may be difficult or impossible to identify anatomical landmarks. This may lead to multiple attempts at lumbar puncture, which may lead to discomfort and pain for the patient or risk causing epidural/spinal hematoma which is a very serious complication. In order to avoid aerosol generation during covid pandemic the best preferred mode of anaesthesia is regional anaesthesia especially for our patient who is a known asthmatic and vitiligo. Literature reviews suggest that vitiligo being an autoimmune condition will be associated with underlying autoimmune arthritis condition which could have made our initial spinal attempts a failure.

Conclusion

Subarachnoid block can be safely administered via Taylor's approach when general anaesthesia has to be

avoided to reduce aerosol generation provided if you are well verse in this technique with necessary backup to revert to GA if Taylor 's approach fails.

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