British Journal of Pharmaceutical and Medical Research Vol.03, Issue 02, Pg.870-873, March-April 2018

Available Online at http://www.bjpmr.org

BRITISH JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

Cross Ref DOI : https://doi.org/10.24942/bjpmr.2018.228 Volume 03, Issue 02, March-April 2018

ISSN:2456-9836
ICV: 60.37

Case Study

Administration of Segmental Thoracic Spinal Anaesthesia For Excision Of Lipoma Back Of Chest – A Case Report

Dr. S. Parthasarathy , Dr P.R. Arthi

[1]Professor, Department of Anaesthesiology, Mahatma Gandhi Medical College And Research Institute, ,Pillayarkuppam , Puducherry , India.
[2]Postgraduate Student, Department Of Anaesthesiology, Mahatma Gandhi Medical College And Research Institute, ,Pillayarkuppam , Puducherry , India.

ARTICLE INFO

Article History:
Received on 16th March, 2018
Peer Reviewed on 23th March 2018
Revised on 19th April, 2018
Published on 26th April, 2018

Keywords:
Anaesthesia, Spinal, Thoracic, Segmental

ABSTRACT

Thoracic (segmental) spinal anaesthesia has been used as an alternative anaesthetic technique for procedures such as cholecystectomy, mastectomy, in both healthy patients and with pulmonary diseases. A 50 year old female obese patient with known case of bronchial asthma with a possible difficult airway access, categorized under ASA grade II, was posted for a big lipoma excision located over left scapular region. Thoracic spinal anaesthesia with 1.4 ml of hyperbaric bupivacaine and 25 µg of fentanyl was given at T7-8space following which patient had a dermatomal level from T2 – L3. Hemodynamic parameters were in the acceptable range throughout the procedure. Sacral sparing was noted. The surgical excision which lasted for thirty minutes in lateral position was uneventful. There were no post anesthetic complications. Thoracic spinal anaesthesia can be an effective and economical anesthetic technique for chest wall surgeries providing intraoperative hemodynamic stability with avoidance of complications of general anaesthesia. Even though such a technique is reported in specific abdominal surgeries, this is possibly the first case report in back of chest surgery.

INTRODUCTION:

Thoracic (segmental) spinal anaesthesia has been used successfully as an alternative anaesthetic technique for procedures such as cholecystectomy, mastectomy, in both healthy patients and with pulmonary diseases. It presents the advantage of a good muscle relaxation, in a conscious patient and a fast post-operative recovery [1,2]. The greatest concern in the administration of spinal anaesthesia above L1 is the possibility of an accidental medullary (spinal cord) puncture with transient or definitive neurological sequelae. Severe hemodynamic instability with severe bradycardia and hypotension may be secondary to the block of cardiac accelerator fibers (T1–T4). So, it is not frequently practiced. Many studies have been done to study the anatomy of thoracic spinal canal using various types of imaging like MRI and they found that there exists a space between the duramater and spinal cord (medulla) and the space is increased in sitting position with adequate flexion [2-4]. Therefore, thoracic spinal anaesthesia can be done meticulously without causing any nerve damage. Thoracic spinal anaesthesia usually causes anaesthesia of a few segments up and down with sacral sparing depending upon the dose. Hence we present this case report of segmental thoracic spinal anaesthesia for a case a big lipoma in the back of chest.

CASE REPORT

A 50 year old female with weight of 95 Kg and Height of 150cm, BMI of 42.2 presented with complaints of pain and swelling in the left back of chest for the past 5 years. Pain was mild on sitting and aggravated on lying in supine position. The size of the swelling was about 10 x 10 cm located at the left mid scapular region and extending up to the infrascapular region. As the patient could not lie down supine, she wanted to undergo the surgery. The swelling was mobile and soft in consistency. There was neither warmth nor tenderness over the swelling. Patient was a known case of bronchial asthma, on inhaled bronchodilator therapy. The last episode was 2 months back, settled with oral medications. On examination patient was conscious, oriented to time and place. Airway examination - Mallampatti Class 3 but other airway parameters were within normal limits, on systemic examination, the respiratory system was clear with no active wheeze or crepitation. The cardiovascular system and central nervous systems were within normal limits. Patient was diagnosed as a case of Lipoma over Left back and proposed for wide local excision. Investigations including Complete blood count with hemoglobin (11gms%), bleeding time, clotting time and blood grouping, ECG, X-ray Chest were done and found to be normal. Pre-anesthetic checkup was done a day before surgery. The patient was asked to remain nil per oral 8 h before surgery. The patient was premedicated with tablet alprazolam 0.5 mg and tablet ranitidine 150 mg in the night before surgery. In the Operation Theater, Emergency Difficult Airway Cart was kept ready, an intravenous (IV) access was secured for preloading and a monitor was attached for monitoring electrocardiogram, heart rate (HR), noninvasive blood pressure, oxygen saturation (SpO_2), temperature, and respiratory rate. Patient was preloaded with 500 ml lactated Ringer's solution. Patient was made to sit with her elbows resting on their thighs on operating table. Flexion of the spine was done and midline approach was used. Under strict aseptic precaution thoracic spinal anaesthesia was given using 1.4 ml hyperbaric bupivacaine mixed with 0.5 ml of fentanyl 50 mcg/ml injected at T7-8 interspace with a 25-gauge spinal needle after confirming its placement by free flow of clear cerebrospinal fluid. The patient was made supine for ten minutes to assess the dermatomal level which was between T2 to L3. Finally, the patient was turned to the left lateral position for the surgery and oxygen was started at 4 L/min by face mask. Hypotension was defined as systolic blood pressure <90 mmHg or >20% decrease in baseline values and was treated by fluids and vasopressors (ephedrine 3 mg). Bradycardia was defined as HR <50/min and was treated by 0.6 mg of atropine injection. Surgical procedure lasted for 30 minutes.(figure1) The patient needed 9 mg of ephedrine and no atropine. Inj.Diclofenac 75 mg IV was given at the end of surgery. The patient was discharged in two days and was normal in a two month follow up.

Fig 1 showing completion of surgery with a sketch of scapula

DISCUSSION

Surgeries in the back of chest pose specific problems like difficulty in choosing any regional technique and possibly lateral position for operative procedure. As the level needed was around T2 in our case, we thought it would not be prudent to administer a routine spinal anaesthetic with its inherent difficulty in achieving the level and the hemodynamic disturbances. Hence we opted for segmental spinal with success. We carefully went with dexterity to get the space with a definite end point of CSF. It was achieved in the first attempt. We did not use epidural needle to guide us as done by previous authors[1]. The spinal anaesthesia technique was performed at the thoracic level T7-T8 with a 25-gauge Quincke spinal needle without any great difficulty. We selected T7 – T8 space as the lower thoracic spine T9 – T11 seemed to be more angulated and possibility of reaching the subarachnoid space may be difficult in our case. The more the upper thoracic , its easier to achieve our block as the mass was around spine of the scapula. Moreover, based on the study done by Lee et al the posterior dura – spinal cord distance is significantly greater in the middle thoracic region than at upper and lower thoracic levels [3]. We used 1.4ml of 0.5% hyperbaric bupivacaine with 25 microgram fentanyl, by which we were able to get complete motor and sensory blockade from T2-L3. The total amount of CSF in the thoracic segment is less in comparison to the lumbar and cervical segment and the thoracic radiculae are thinner as compared to the lower or upper ones. So, there is a lesser dilution of the anesthetic from the site of injection, and the rootlets are easily blocked due to its small diameter[4]. We didn't experience any significant hypotension or bradycardia throughout the surgery the probable reason could be the usage of low volume of local anaesthetic and using fentanyl as an adjuvant which provided dense block without altering the hemodynamic stability as thoracic spinal anaesthesia is supposed to cause much haemodynamic disturbance. In yet another study[5], Laparoscopic cholecystectomy was performed successfully under spinal anesthesia. They showed that a smaller dose of hyperbaric bupivacaine 7.5 mg (1.5 ml) and 20 µg fentanyl provided adequate spinal anesthesia for laparoscopy and, when compared with lumbar hyperbaric bupivacaine and fentanyl 20 µg, caused less hypotension. The low-dose bupivacaine strategy may be advantageous in ambulatory patients because of the quicker recovery of motor and sensory function and with an earlier discharge. A reasonable dose of half of the lumbar dosage[6]was suggested by a few, even though it has to be rationalized for segments need to be blocked. Thoracic spinal anesthesia is also feasible in breast surgeries and successfully administered in a select patients[7].Our patient was obese with a difficult airway. She also had episodic wheezing. These comorbid conditions prompted us to think in terms of regional anesthesia. Paravertebral block[8] could also been an alternative but its difficult to get complete blockade of segments as there is no end point such as dripping of cerebrospinal fluid as in our case. A thorough search on the internet did not reveal any case report of position other than supine and any back of chest surgeries with segmental spinal anaesthesia. Hence we report this case as the first possible case of chest wall surgery in lateral position under thoracic segmental anaesthesia.

CONCLUSION

Thoracic spinal (segmental) anaesthesia is a viable alternative to anaesthetize thoracic level surgeries with acceptable hemodynamic changes. This technique is also feasible in chest wall surgery in lateral position. This technique could be more utilized where administration of general anesthesia could prove risky. Adequate manual dexterity is needed as the technique involves pricking at the level where spinal cord has not ended and the spinous processes are oblique.

REFERENCES

1.A. A. J. van Zundert, G. Stultiens, J. J. Jakimowicz, B. E. E. M. van den Borne, W. G. J. M. van der Ham, J. A. W. Wildsmith; Segmental spinal anaesthesia for cholecystectomy in a patient with severe lung disease, British Journal of Anaesthesia, 2006; (96), 4: 464–466

2. Patel K, Salgaonkar S. Segmental thoracic spinal anaesthesia in patient with Byssinosis undergoing nephrectomy. Anesth. Essays and Res. 2012;6(2):236-238.

3. Lee RA, van Zundert AAJ, Breedveld P, Wondergem JHM, Peek D, et al. (2007) The anatomy of the thoracic spinal canal investigated with magnetic resonance imaging (MRI). Acta Anaesth Belg 58(3): 163-167.

4.Hogan QH, Prost R, Kulier A, Taylor ML, Li S, et al. (Magnetic resonance imaging of cerebrospinal fluid volume and the influence of body habitus and abdominal pressure. Anesthesiology; 1996; 84(6): 1341- 1349.

5. Imbelloni LE, Sant'anna R, Fornasari M, Fialho JC. Laparoscopic cholecystectomy under spinal anesthesia: comparative study between conventional-dose and low-dose hyperbaric bupivacaine. Local Reg Anesth. 2011;4:41-6.

6.Imbelloni LE, Gouveia MA (Thoracic Spinal

Anaesthesia. J Anesth Crit Care Open Access2016; 4(5): 00160. 1-5.

7. Mahmoud AA, Hussein HA, Girgis K, Kamal AM, Nafady HA. The novel use of spinal anesthesia at the mid-thoracic level: a feasibility study. Egypt J Cardiothorac Anesth 2014;8:21-6
8. James Simpson, Arun Ariyarathenam, Julie Dunn, and Pete Ford, "Breast Surgery Using Thoracic Paravertebral Blockade and Sedation Alone," Anesthesiology Research and Practice; 2014: 127467 : 1-4

How to cite this article:
S. Parthasarathy , P.R. Arthi . ***Administration Of Segmental Thoracic Spinal Anaesthesia For Excision Of Lipoma Back Of Chest – A Case Report.*** **Br J Pharm Med Res , Vol.03, Issue 02, Pg.870-873, March - April 2018. ISSN:2456-9836 Cross Ref DOI : https://doi.org/10.24942/bjpmr.2018.228**

Source of Support: Nil **Conflict of Interest:** None declared