

ANAESTHETIC MANAGEMENT OF A PATIENT POSTED FOR TOILET MASTECTOMY BY PARAVERTEBRAL PLUS BRACHIAL PLEXUS BLOCK

Dr. Abirami Shanmugam¹ and Dr. Surya Rathnasamy^{2*}

¹ Post Graduate, Department of Anesthesiology, Saveetha Medical College.

² Associate Professor Meenakshi Medical College and Hospital.

*Corresponding Author

DOI: [10.5281/zenodo.12650617](https://doi.org/10.5281/zenodo.12650617)

Abstract

A 48year old female with no comorbidities with stage 4 CA with distant metastasis posted for toilet mastectomy under paravertebral plus brachial plexus block. successful performance of block under ultrasound guidance by skilled anesthetist and precised management of intraoperative and postoperative period with no rescue analgesic drug for 24 hours is discussed in this case.

INTRODUCTION

Regional anesthesia not only safe alternative to general anesthesia but often can be an anesthetic technique of choice in many surgeries. General anesthesia for a patients with CA stage four with metastasis increases the risk of perioperative MACE and pulmonary complications postoperative icu bed with elective ventilation may require long hospital stay so opting regional anesthesia is better option for such patients (1).We present a successful management of an adult women posted for toilet mastectomy with right thoracic paravertebral and right brachial plexus and supraclavicular nerve block.

CASE HISTORY

48 year old female weighing 64kg with no comorbidities was admitted with STAGE 4 fungating right CA breast on PETCT evaluation shows distant metastasis to lung, brain, liver,multiple vertebral bodies and sacrum posted for right toilet mastectomy. ON examination she was consious oriented ,vitals within normal limits ,blood investigations within normal limitis. ECG,ECHO normal CXR shows multiple mets. Plan of anesthesia 1)Regional anesthesia (Right thoracic paravetebral+brachial plexus block) plus GA (SGA guided spontaneous ventiation)2)General anesthesia On the day of surgery after 8 hours fasting she was shifter to OR, Procedure explained. Routine ASA monitors connected vitals normal.Patient in sitting position front supported with pillow arms rested on table using logistic usg machine with 8-13 high frequency linear probe in nerve average mode by transverse approach at the level of right d3-d4 10 ml of LA and at the level of d6-d7 10ml of LA deposited. Patient made lay down, supraclavicular nerve block with 2ml LA and right brachial plexus block done with 10ml of LA done. Vitals stable throughtout procedure.Adequacy of block checked and confirmed by hand movements and power C5-T1 and pinprick sensation points marked and connected in both dorsal and ventral aspect for C6-T10.Level adequate. For intraoperative sedation midaz 1mg+fentanyl 50mcg given .6L O2 via hudson mask. Without any intraoperative advents events and need of rescue analgesic agents with stable vitals and 150ml blood loss sugery done in 2hrs 50 mins duration.Poatoperative patient stable monited for pain score and power for motor.

Motor blockade returns in 8 hours and pain reoccurs after 24 hrs from the time of blockade till then no rescue analgesic were given.

Image while giving brachial plexus block:

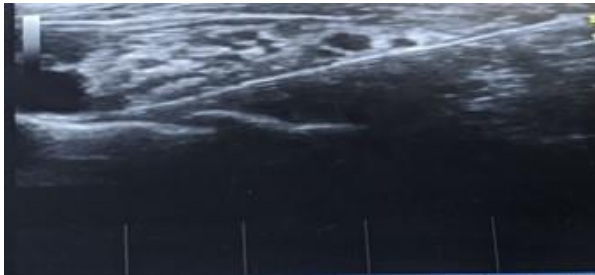


Image Showing Anesthetised Area After Block :



DISCUSSION

Regional anesthesia and peripheral nerve block plays major role in the field of anesthesia. Peripheral nerve block using real time ultrasound imaging increases the ability of the anesthetist to identify the neural structures, makes needle placement easy to place in the closest proximity to the target and precise administration of optimal volume of local anesthesia (2) . For various purpose PNBs are useful such as acute pain/chronic pain management, procedural/postoperative analgesia(3) . Here we chose Paravertebral block with brachial plexus block as as procedural anesthesia and analgesia. PNBs works by inhibiting impulse transmission distally in nerve terminal, thus terminating the pain signal perceived by the cortex. With advent of Ultrasound guided PNB blocks are done in most precised and in efficient manner with minimal use of drug and by avoiding vital structural damage, arterial injection and nerve damage(4). The advantage of peripheral nerve blocks is that they

provide analgesia and immobilization to the target limb while avoiding the side effects of general anesthesia which include nausea/vomiting, sore throat, fatigue, and prolonged hospital stay(4).Regional anesthesia reduce rate of recurrence and metastasis of spreading cancer(5).Here while performing paravertebral block utmost care taken to avoid plural puncture.

Several perioperative factors are responsible for the dysregulation or suppression of the immune system with a possible impact on cancer cell growth and the development of new metastasis. These factors have the potential to directly suppress the immune system and activate hypothalamic-pituitary-adrenal axis and the sympathetic nervous system with a consequent further immunosuppressive effect. In some preclinical study shows inhalational anesthetics such as isoflurane and sevoflurane increase risk of cancer spread(6).As far as after referring many articles and to the best of our knowledge previous studies on effect of GA with inhalation/TIVA have some percentage of increasing metastasis and recurrence rate by increasing IL6,TNF alpha,IL10(7).So we opted regional anesthesia over general anesthesia for this patient who is already in stage 4 CA posted for palliative surgery there by bypassing perioperative MACE and pulmonary complication.

CONCLUSION

We have presented successful management of a toilet mastectomy case with stage 4 CA with mets with ultrasound guided paravertebral block as procedural anaesthesia and analgesia without need of any analgesic and sedative rescue drug during procedure and in postoperative period in total 24 hours. So we here emphasis that performing successful regional anesthesia over general anesthesia can bypass perioperative MACE and pulmonary complication and can avoid chances for metastasis and need for rescue drug. Polypharmacy can be reduced or avoided during intra operative as well as in postoperative period.

References

- 1) **Functional recovery with peripheral nerve block versus general anesthesia for upper limb surgery: a systematic review protocol** Jennifer Héroux, Emilie Belley-Côté, Pablo Echavé, Marie-Josée Loignon, Pierre-Olivier Bessette, Nicolas Patenaude, Jean-Patrice Baillargeon & Frédéric D'Aragnon *Systematic Reviews* volume 8, Article number: 273 (2019)
- 2) Minimal effective dose of ultrasound-guided rectus sheath block to reduce oral analgesic requirement after ambulatory laparoscopic tubal resection: a randomized controlled superiority trial Sirikarn Siripruetpong,¹ Jinsupha Aphinyankul,¹ Thavat Chanchayanon,¹ Maliwan Oofuvong,¹ Jatupon Pakpirom,¹ Chainarong Choksuchat,² Patrapon Packawatchai,¹ and Jumras Na Klongdee
- 3) **Peripheral nerve blocks in the management of postoperative pain: challenges and opportunities** Girish Joshi¹, Kishor Gandhi², Nishant Shah³, Jeff Gadsden⁴, Shelby L Corman⁵
- 4) Brogi, E., Forfori, F. Anesthesia and cancer recurrence: an overview. *J Anesth Analg Crit Care* 2, 33 (2022). <https://doi.org/10.1186/s44158-022-00060-9> ,Received08 April 2022,Accepted05 July 2022,Published20 July 2022
- 5) **Regional anesthesia might reduce recurrence and metastasis rates in adult patients with cancers after surgery: a meta-analysis** Shuang Xie, Liang Li, Fanqing Meng & Huanliang Wang *BMC Anesthesiology* volume 24, Article number: 19 (2024)
- 6) The Potential Effect of General Anesthetics in Cancer Surgery: Meta-Analysis of Postoperative Metastasis and Inflammatory Cytokines Ru Li, Mousumi Beto Mukherjee, Zhaosheng Jin, Hengrui Liu,[†] Kevin Lin, Qiuyue Liu,[‡] James P. Dilger, and Jun Lin^{*}