ISSN- O: 2458 - 868X, ISSN–P: 2458 – 8687
Index Copernicus Value: 68 . 16
PubMed - National Library of Medicine - ID: 101731606

International Journal of Medical Science and Innovative Research (IJMSIR)
IJMSIR : A Medical Publication Hub
Available Online at: www.ijmsir.com
Volume – 4, Issue – 6, December - 2019, Page No. : 146 - 148

Thoracic epidural and Dexmedetomidine sedation for trans-sternal thymectomy - A Case Report

[1]Dr. Garima Anant, [2]Dr. Manisha Yadav

[1]Assistant Professor, [2]Post Graduate MD 2nd Year Student

Department of Anaesthesia, P.G.I.M.S, Rohtak.

Corresponding Author: Dr. Manisha Yadav, PG, Department of Anaesthesia, P.G.I.M.S, Rohtak, India.

Type of Publication: Case Report

Conflicts Of Interest: Nil

Abstract

Myasthenia Gravis is an autoimmune disease of neuromuscular junction characterized by release of antibodies against acetylcholine receptors. Surgery in the form of thymectomy, to remove the thymus gland will often be recommended lest it should cause problems if it's left to keep getting bigger. We report a case of thymectomy of a 35 year old female under high thoracic epidural blockade under dexmedetomidine sedation.

Keywords: Myasthenia Gravis, thymectomy, high thoracic epidural blockade, Dexmedetomidine

Introduction

Thymectomy is indicated as a part of treatment in MG patients but it is challenging because of sensitivity of these patients to non depolarising muscle relaxants during anesthesia.[1] Alternative techniques to non muscle relaxants being used are either Remifentanil alone [2] or high thoracic epidural.[3] An alpha 2 agonist Dexmedetomidine, a sedative analgesic has been used widely in thoracic surgeries.[4]

Case report

A 35 year old female, weighing 55kg, height 163cm, diagnosed to have Myasthenia Gravis was admitted for Trans-sternal Thymectomy after she presented with generalized weakness and ptosis of bilateral eyes for 2 years, prior to surgery. The patient was classified as Osserman's class lla. CECT chest was done which revealed presence of thymoma of size 3.5 cm in anterior mediastinum. Anticholinestrase receptor antibodies were positive and repetitive nerve stimulation test showed detrimental response. On clinical examination, power was ⅗ in all and deep tendon reflexes were 1+ in all the 4 limbs. Patient was following a treatment comprising of pyridostigmine 60mg thrice a day, tablet prednisolone 10mg once a day and tablet azathioprine 100mg twice a day for 2 years prior to thymectomy.

On the day of surgery patient received her morning dose of pyridostigmine, prednisolone and azathioprine. In the operating room, an intravenous line was secured with 16G cannula and injection midazolam 2mg was given as premedication while all routine vital monitors (ECG, NIBP, EtCO2 and pulse oximetry) were attached. Arterial line was inserted in the left radial artery. Regional anaesthesia comprising thoracic epidural, was performed by insertion of epidural catheter at the level of T4-T5 intervertebral space using loss of resistance technique to achieve sensory blockade between T2 to T10 dermatome, (before Dexmedetomidine sedation was started). Test dose was given epidurally with 3ml of lignocaine hydrochloride

and adrenaline injection. After checking for the adequacy of epidural test dose, and recording the vitals to be normal, loading dose of 6ml of 0.5% bupivancaine was given epiduarally to achieve T2-T10 dermatomal blockade and maintained subsequently by continuous infusion of 0.0625% of bupivacaine @4ml/hour epidurally.

Following epidural blockade, the patient was started on Dexmedetomidine 1mcg/kg I/V loading dose over 10 minutes f/b a maintenance with an infusion of 0.5mcg/kg/hr I/V till the end of surgery. The patient was haemodynamically stable throughout the surgery. The patient breathed spontaneously with oxygen supplementation via venti mask, with oxygen flow @ 4L/minute. SpO2 and EtCO2 was monitored and maintained between 92-100 % and 35-45mm respectively. Post - op analgesia was maintained with thoracic epidural anaesthesia. The surgery lasted for about 95 minutes. Patient was widely awake 10 minutes following stoppage of Dexmedetomidine infusion. Patient was transferred to HDU for 1 day and then transferred to parent ward. Patient was very satisfied with anaesthesia and there were no postoperative side effects (pain or respiratory depression). Drainage tube was removed the next day. Patient was discharged 5 days later without any sequelae.

Discussion

Myasthenia Gravis is a chronic autoimmune disorder of the neuromuscular junction characterized by decreased acetylcholine receptors due to their destruction or inactivation by circulating IgG antibodies. Patients presents with weakness and fatigue in ocular, bulbar, limbs and respiratory muscles due to repetitive use.[5] Symptoms of MG may be exacerbated by surgery and stress.Trans-sternal Thymectomy is treatment of choice in patients with generalized MG. MG patients are more sensitive to the effects of nondepolarizing neuromuscular blockers and resistant to effects of depolarizing neuromuscular blocker succinylcholine(5,6). Anaesthesia in MG patient requires special attention in regard to the goal of postoperative pain controls to reduce acute surgical stress response which can worsen disease symptoms and may trigger myasthenia crisis .[5,6] Postoperative pain may lead to respiratory compromise and opioids usage could be a factor for central respiratory depression. So for this type of patients, relatively opioids free anaesthetic modalities are accepted and convenient.[5,6]

For analgesia in thoracic surgeries, regional anaesthesia has been reported to have satisfactory outcomes. Dexmedetomidine infusion provides a stable intraoperative course, facilitates rapid emergence, early mobilisation, reduces requirement of opioid analgesics, decreases the incidence of nausea and vomiting, reduces postoperative hospital stay interval, and offers greater patient satisfaction in comparison to general anaesthesia.

Conclusion

We definitely support the use of non- muscle- relaxant anaesthetic technique for trans-sternal thymectomy as it provides better quality of postoperative pain control, and reduces respiratory and cardiac complications.

References

1. Baraka A. Anesthesia and myasthenia gravis. Can J Anaesth 1992; 39(5): 476-86.
2. Lorimer M, Hall R. Remifentanil and propofol total intravenous anaesthesia for thymectomy in myasthenia gravis. Anaesth Intensive Care 1998;26:210-2.
3. Mekis D, Kamenik M. Remifentanil and high thoracic epidural anaesthesia: a successful

combination for patients with myasthenia gravis undergoing transsternal thymectomy. Eur J Anaesthesiology 2005;22:397-8.

4. Purugganan, RV. Intravenous anesthesia for thoracic procedures. Current opinion in anaesthesiology: Feb 2008- Volume 21- Issue 1- p 1-7
5. B. M. Conti-Fine, M. Milani, and H. J. Kaminski, “Myasthenia gravis: past, present, and future,” The Journal of Clinical Investigation, vol. 116, no. 11, pp. 2843–2854, 2006.
6. L. Blichfeldt-Lauridsen and B. D. Hansen, “Anesthesia and myasthenia gravis,” Acta Anaesthesiologica Scandinavica, vol. 56, no. 1, pp. 17–22, 2012.