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Case Report Open Access

Cervical Epidural Analgesia with Laryngeal Mask Airway Assisted Ventilation for Thymectomy in Myasthenia Gravis

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Abstract

Myasthenia gravis is a disease of great significance to the anesthesiologist, because it affects the neuromuscular junction. In this paper, we discuss the case of a 57 y. Old male patient with newly diagnosed myasthenia gravis who is scheduled for transsternal thymectomy. Anaesthesia for thymectomy in myasthenia is challenging. We have used a modern approach and have successfully done thymectomy under general anaesthesia avoiding need for intubation of trachea and most importantly avoiding use of muscle relaxant. We maintained adequate muscle relaxation with the use of inhalational agent (Sevoflurane) and anaesthetic dose of local anaesthetic through cervical epidural.

Keywords: Myasthenia gravis; Transsternal thymectomy; General anaesthesia

Introduction

Myasthenia Gravis (MG) is an autoimmune disease characterized by weakness and fatigability of skeletal muscles, with improvement following rest. It may be localized to specific muscle groups or it may be generalized. The incidence is 50-142 cases per million population. Myasthenia Gravis is caused by a decrease in the numbers of postsynaptic acetylcholine receptors at the neuromuscular junction, which decreased the capacity of the neuromuscular end-plate to transmit the nerve signal. The perioperative management of this particular patient introduced several problems and topics for discussion: (a) The preoperative approach and the premedication to be used (b) The anesthetic drugs and more in particular the use of neuromuscular blocking agents and (c) the postoperative analgesia [1-6].

Case Presentation

A 57 year old male (weight-72 kg) Presented with ptosis, generalized weakness since 2 months. He was diagnosed by neurologist as a case of Myaesthenia Gravis [7-9]. His diagnosis was confirmed by positive neostigmine test, antiAchR Ab titer 1.75 nmoL/L (Normal level 0.0-0.25). CT scan showed well defined mildly enhancing soft tissue mass in anterior mediastinum 6.6 × 4.4 cm. most likely to be a thymoma. He was started on tab pyridostigmine 30 mg TID. Patient showed good response to medical line of management. His Thyroid function test was normal. All other studies are normal. Patient was referred to our hospital for thymectomy. Patient was scheduled for transsternal thymectomy. Routine preanaesthetic evaluation done. His routine medication continued on the day of surgery.

On arrival to operation theatre, IV line secured with 16 G cannula and inj. Ranitidine, Glycopyrrolate, ondansetron and antibiotics given, intravenously. ECG, pulse oximeter were attached. Invasive BP monitoring was established with right radial artery cannulation. ABG showed PaO_2-79 mmHg, PCo_2-37 mmHg, pH-7.4, HcO_3-22.8 mmol/lit. In sitting position under close monitoring of vitals, cervical epidural catheter at C7-T1 level inserted [3]. Patient was made supine on operative table. Test dose of Lignocaine 2% 3 cc given. Oxygen by face mask @5 lit/min started. Injection Lignocaine 2% 5 cc and Ropivacaine 0.75% 7 ml administered through catheter. Segmental block was confirmed with loss of temperature sense from suprasternal notch to upper abdomen [10-13].

Premedication Injection Fentanyl 100 µg and Injection Midazolam 1 mg was given. Patient was induced with injection Propofol 100 mg. Preoxygenation with 100% O_2 continued via facemask. Gentle manual ventilation started with O_2 and sevoflurane 2-4%. After adequate depth of anaesthesia, laryngeal mask airway Supreme No 4 TM inserted [4,5]. Cuff inflated initially assisted bag ventilation given. Then Patient connected to ventilator settings 500 ml. VT and 16 RR. Inhalational agent sevoflurane 1-2% and Injection. Propofol infusion @5 ml/h [6,7]. Used during surgery. One suction catheter No. 14 inserted through the suction part of laryngeal mask airway, to ensure continuous deflation of stomach [14].

After painting and draping, surgery started. Sternotomy done. Heamodynamics were stable during sternotomy [15-17]. Airway pressure was between 15-20 cm H_2O throughout surgery.

After one hour of surgery, inj. Ropivacaine 5 ml. 0.75% given through epidural catheter. Thymectomy was completed uneventfully. Throughout surgery patient was stable haemodynamically. Surgeon was happy with muscle relaxation [18-24]. At the end of procedure all anaesthetic agents discontinued. 10 min later patient regained consciousness, responding to verbal commands. Laryngeal mask airway was safely removed after deflation of cuff and thorough suction. There was no evidence of regurgitation of gastric contents as per Litmus Paper test. After removal of laryngeal mask airway patient were conscious, obeying commands, opening eye, yet pain free. Patient shifted to PACU with O_2 by mask [25-30].

In PACU, postoperative analgesia was continued with inj. Ropivacaine infusion for 24 h. Patient was comfortable and analgesia

was excellent, no residual muscle weakness early breathing exercise and incentive spirometry were started. Postoperative X-ray chest showed no abnormality and the excised mass was diagnosed as follicular thymic hyperplasia [31-40].

Discussion and Conclusion

Anaesthesia for thymectomy in Myaesthenia gravis is challenging. The different anaesthetic techniques for thymectomy are classified into Muscle relaxant and non-muscle relaxant techniques. It is well known that myasthenic patients are sensitive to non-depolarizing NMB'S and resistant to NMB'S.

The use of muscle relaxants in myaesthenic patients has been associated with i) A higher rate of unsuccessful extubation, ii) Longer post-operative mechanical ventilation, iii) Longer stay in hospital. We have successfully done thymectomy under general anaesthesia avoiding need for intubation of trachea and most importantly avoiding use of muscle relaxant we maintained adequate muscle relaxation with the use of inhalational agent (sevoflurane) and anaesthetic doses of local anaesthetic through epidural. Surgical muscle relaxation, analgesia was not a problem throughout operative period. We could remove the laryngeal mask airway immediately after surgery in or without any complications. We conclude that anaesthesia for Thymectomy can be achieved safely with the above mentioned techniques.

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