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Case Report

Anaesthetic Management in Guillain-Barré Syndrome Undergoing Total Hip Replacement: A Case Report

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Abstract: Guillain-Barré syndrome (GBS) is a complicated degenerative neurological disorder which can be acute or chronic in nature. It is an acquired condition which is characterized by progressive, symmetrical, proximal and distal tingling and weakness. Muscle stretch reflexes are decreased to absent and loss of sensation is common. These patients present a substantial anaesthetic risk because of autonomic dysfunction. We report a case of 51 year old female with Guillain-Barré syndrome (GBS) undergoing total hip replacement managed under general anaesthesia and ultrasound guided erector spinae plane block given for post operative pain relief.

Keywords: nature, Guillain-Barré syndrome (GBS), weakness, patients.

INTRODUCTION

Guillain-Barré syndrome (GBS) is an acute demyelinating polyneuropathy with an incidence of Guillain-Barré syndrome has been reported as 0.75 to 2 cases per 100,000 persons per year. Patients usually present with progressive, ascending motor weakness of the extremities, areflexia, and sensory disturbances generally preceded by a prodromal illness (usually gastrointestinal or respiratory infection) [4]. Weakness may even extend upto the muscles of respiration which may result in the need for mechanical ventilatory support [3]. The mortality rates range from 4% to 15% and proximately 20% of patients are left with a chronic disability [4, 5, 6]. Autonomic dysfunction occurs in around 70% of patients which may be life threatening and also increases the anesthetic risk. The current case report describes a 51 year old female suffering from Guillain-Barré syndrome (GBS) who underwent total hip replacement on left side.

CASE REPORT

A 51 year old female with a history of Guillain-Barré syndrome (GBS) was posted for left sided total hip replacement. She has a history of weakness in both the lower limbs which was followed by a sudden fall after which she was diagnosed with Guillain-Barré syndrome (GBS). She underwent intravenous immunoglobulins for 7 days after which her symptoms resolved significantly. On examination at present she has mild numbness and decreased sensations in the fingers of upper limb. On general physical examination no other neurological or organic abnormality was found. All the routine investigations and airway assessment were within the normal limits.

The surgery was planned under general anaesthesia. Patient was taken in the operating theatre and standard monitors were attached. Two iv cannula were inserted in the peripheral veins (18 G on right and 20 G cannula on left). Preoxygenation was done with 100% O2 followed by induction using injection Propofol 140 mg injection Atracurium 25mg. Oral endotracheal tube of size 7.0 was inserted in the first intervention. Adequate bilateral air entry was confirmed along with waveform capnography. Injection Fentanyl 100 mcg was given for analgesia. Anaesthesia was maintained on 50% oxygen 50% air and sevoflurane with MAC 1.0 injection Atracurium 10 mg and injection Fentanyl 25 mcg intermittently repeated for muscle relaxation and analgesia respectively. Cumulative blood loss during the surgery was approximately 950 ml which was replaced by transfusion of one unit packed red blood cells and one

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colloid. Rest of the surgery was eventful. Total duration of surgery was around three hours and thirty minutes. For post operative analgesia patient was administered an ultrasound guided erector spinae plane block with the patient in right lateral position. A convex ultrasound transducer was placed 4-6 cm lateral to L4 spinous process in a longitudinal parasaggital orientation. The erector spianae muscle was identified superficial to transverse process of L4 vertebra. Using an out-plane superior to inferior approach a 22 gauge 10 cm needle was inserted to place the tip of needle into the fascial planeon anterior aspect of erector spinae muscle. The needle tip was localised by the visible fluid spread. A total of injection Bupivacaine 0.25% 20 ml was injected. Patient was reversed with injection Neostigmine and injection Glycopyrrolate after resumption of spontaneous respiration. The patient was then extubated after achieving adequate tidal volume. The patient maintained spo2 of 99% on room air and was shifted to PACU for further care and management. Patient was comfortable post operatively and the analgesia lasted for around 8 hours without the need of an opiod.

DISCUSSION

GBS is an acute monophasic demyelinating neuropathy. The disease is characterized by progressive motor weakness of limbs with areflexia [1]. Preceding antecedent infections, mostly viral, are seen in half of the cases. It has been observed that almost one-third of patients required ventilatory support for respiratory paralysis in the past with about 10% mortality. Immunoglobulins and plasmapheresis have made a significant change in the course of the illness [2]. In our case, patient did not require ventilator support.

In patients with Guillain-Barré syndrome, both regional and general anesthesia may be performed. The reports have suggested that there is no superior mode of anesthesia, as administration of both regional and general anesthesia have each been associated with potential risks. There have been case reports that report the incidence of Guillain-Barré syndrome developing approximately two weeks after the bilateral total hip replacement surgery who received combined spinal and epidural anaesthesia [3]. There have been various case reports that described that a key triggering factor in the etiology of the Guillain- Barré syndrome may be a surgical stress [13], though extremely rare in the post operative period but it has been reported in various surgeries like pancreatectomy [7], cranial surgery [8], madibular surgery [9], gastrectomy [10], spine surgery [11], and transplant surgery [12]. Another theory suggests that during administration of an epidural anesthesia leads to the interaction between the anesthetic agents and peripheral nervous system myelin or local trauma to nerve roots which initiates a series of an immunologic events. These events results in the demyelinating neuropathy almost 1-2 weeks after the anesthetic delivery [14]. This meticulous planning and its execution is of utmost importance for safety of the patients undergoing surgery.

REFERENCES

1. Joshi, K., Patel, M., Gupta, R., & Bajaj, N. (2016). Guillain–barre syndrome: a case report. Int J Med Sci Public Health, 5, 1295-1296.
2. Koul, R., Chacko, A., Ahmed, R., Varghese, T., Javed, H., & Al-Lamki, Z. (2003). Ten-Year Prospective Study (Clinical Spectrum) of Childhood Guillain-Barré Syndrome in the Arabian Peninsula: Comparison of Outcome in Patients in the Pre—and Post—Intravenous Immunoglobulin Eras. Journal of child neurology, 18(11), 767-771.
3. Heyworth, B. E., Fabricant, P. D., Pizzurro, M. M., Beksac, B., & Salvati, E. A. (2011). Guillain–Barré syndrome mimicking nerve injury after total hip arthroplasty. HSS Journal®, 7(3), 286-289.
4. Hughes, R. A., & Cornblath, D. R. (2005). Guillain-barre syndrome. The Lancet, 366(9497), 1653-1666.
5. Gautier, P. E., Pierre, P. A., & Van Obbergh, L. J. (1989). Guillain-Barre syndrome after obstetrical epidural analgesia. Regional Anesthesia: The Journal of Neural Blockade in Obstetrics, Surgery, & Pain Control, 14(5), 251-252.
6. Cosi V. (2006). Guillain-Barre syndrome. Neurol Sci 27 Suppl 1.
7. Bamberger, P. D., & Thys, D. M. (2005). Guillain-Barré syndrome in a patient with pancreatic cancer after an epidural-general anesthetic. Anesthesia & Analgesia, 100(4), 1197-1199.
8. Foubert-Samier, A., Penchet, G., Yekhlef, F., Lemasson, G., & Sibon, I. (2005). Guillain-Barre syndrome secondary to cranial surgery: direct or fortuitous relationship?. Neuro-chirurgie, 51(6), 604-606.
9. Shuert, G. T., & GT, S. (1972). Guillain-Barre syndrome after mandibular surgery: report of case. 30:12.
10. ORRINGER, D. (1958). Gastrectomy complicated by the Guillain-Barre syndrome. AMA archives of surgery, 76(3), 447-450.
11. Riebel, G. D., Heller, J. G., & Hopkins, L. C. (1995). Guillain-Barré syndrome after an operation on the spine. A case report. JBJS, 77(10), 1565-1567.
12. Bulsara, K. R., Baron, P. W., Tuttle-Newhall, J. E., Clavien, P. A., & Morgenlander, J. (2001). Guillain-Barre syndrome in organ and bone marrow transplant patients. Transplantation, 71(8), 1169-1172.
13. Koc, M., Ozalp, N., & Zulfikaroglu, B. (2002). Major surgery with Guillain-Barre syndrome: a case report. Journal of international medical research, 30(6), 601-604.
14. Steiner, I., Argov, Z., Cahan, C., & Abramsky, O. (1985). Guillain- Barré syndrome after epidural anesthesia: Direct nerve root damage may trigger disease. Neurology, 35(10), 1473-1473.

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