EPIDURAL ANAESTHESIA FOR PERI-OPERATIVE CARE OF MULTIPLE SCLEROSIS - A CASE REPORT

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INTRODUCTION

Multiple sclerosis is a disabling disease of the young adults typically affecting between 20-40 year of age. There is widespread damage to axons and demyelination in the CNS. Local anaesthetics have an exaggerated effect on the spinal cord in the presence of demyelination. The effects of stress, anaesthesia and surgery on the course of the disease are controversial. Effect of general anaesthesia is unpredictable while central neuraxial blocks have been implicated as possible causes of reactivation of disease [1]. We report this case in which patient was scared of general anaesthesia because of her previous bad experience. Most of the studies contradict the use of spinal anaesthesia in multiple sclerosis because of prolonged paralysis and refractory hypotension; [2] therefore we planned epidural anaesthesia.

CASE REPORT

A 40 years old lady, known case of Multiple Sclerosis for the last seven years, presented to anaesthesia department. She had complaint of menorrhagia for which trans-abdominal hysterectomy was planned. According to patient, seven years ago she had history of recurrent UTIs and urgency of urine for which diagnostic cystoscopy was done under general anaesthesia without using any muscle relaxants. Her recovery from anaesthesia was delayed. She was kept in intensive care for three days. Afterwards she was investigated for her delayed recovery from anaesthesia. Initial investigations revealed nothing. Finally on suspicion her brain MRI was done which showed the diagnosis of Multiple Sclerosis. Since then she remained well, except for slight weakness in both lower limbs and urgency and hesitancy of urine. She was not taking any medication. Her neurological examination revealed decreased power (4/5) in both lower limbs. There was no sensory deficit. The lady didn't consent for general anaesthesia because of her previous experience therefore epidural anaesthesia was planned for her. She was given full explanation of the procedure and its possible outcomes. The detrimental effect of anaesthesia and surgery on her disease was clearly explained. A special consent was taken from her. On the day of surgery she was preloaded with 1000ml of Lactated Ringer's solution. Epidural anaesthesia with an indwelling catheter was given.0.25% Bupivacaine 16 ml in 5 ml increments was used. Anaesthesia up to T6 level was confirmed and surgery was started. She was sedated with midazolam 2 mg i.v. Careful monitoring was done during the procedure. After 20 minutes she developed hypotension although low concenterations of bupivacaine were used and she was pre-loaded with 1 L of Lactated Ringer's solution. Intravenous infusion rate was increased but it failed to correct hypotension, so ephedrine in increments of 3-5 mg every 5-10 minutes, was used to treat hypotension. After surgery she was shifted to intensive care unit. For post-operative pain relief epidural bupivacaine 0.0625% 12-15ml, 4 hourly was used. She was discharged 3 days after the surgery with no residual muscle weakness. She was followed up for four months and during that period she had no remission of the disease.

DISCUSSION

Multiple sclerosis is characterized by a course of exacerbations and remissions in 85-90% of patients [3]. Several precipitating

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factors have been identified such as infection (mostly URTI), early post-partum period, trauma, surgery, anaesthesia, stress, and hyperthermia [4].

The common initial presentation is weakness, numbness, tingling or unsteadiness in a limb, spastic paraperesis, retro-bulbar neuritis, diplopia, disequilibrium, or a sphincter disturbance such as urinary urgency or hesitancy. Several forms of disease are recognized. In most common form known as relapsing-remitting disease, there is an interval of months or years after the initial episode before new symptoms develop. Eventually incomplete remissions lead to increasing disability, with weakness, spasticity, and ataxia of limbs, impaired vision and urinary incontinence. Increase in body temperature causes exacerbations of symptoms, presumably by decreasing nerve conduction. Many of the factors that are linked with exacerbations of disease, such as physical and emotional stress, fatigue, hyperthermia, and infection also occur in the perioperative period.

Lumbar puncture is frequently performed in patients with MS, yet there is no evidence that this diagnostic procedure is linked with exacerbation of disease. Local anaesthetics have been implicated as a possible cause of exacerbation of MS in patients undergoing central neural blockade. Moreover, patients who experienced exacerbation of MS had received epidural anaesthesia with bupivacaine concentrations greater than 0.25%. Kytta et al [5] noted that out of 56 documented patients of MS, five patients who received central neural blockade, experienced extensive sympathetic blockade with marked hypotension and reduced response to fluid and vasopressor therapy. Perhaps there is greater uptake of local anaesthetics in the spinal cord following spinal or epidural injections in the presence of demyelination. Spinal anesthesia causes exacerbation of the disease and should be avoided [6]. For epidural anesthesia concentrations of bupivacaine should not be more than 0.25%. These patients have a labile autonomic system; therefore care should be taken to avoid hypotension during epidural block. Hyperthermia has detrimental effect. Demyelinated fibers are extremely sensitive to increases in temperature and evidence shows that even a 0.5°C rise in temperature may completely block the conduction.

Although this is only one case report but purpose is to exercise great causion while giving anaesthesia to such patient.

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