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Anaesthetic Management of a Patient with Spinal Stenosis and Lumbar Disc Disease

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Abstract: *Here is a case of 43 year female posted for Total Abdominal Hysterectomy with Bilateral Salpingo-oophorectomy with a previously diagnosed Sciatica. The patient had a history of low back ache since 3 years. She had a complaint of typical radiating pain and tingling sensation in her left leg. The MRI report showed Degenerative disc disease at lower lumbar region with mild disc bulge at L3-L4 level and diffuse disc bulge and central herniation at L4-L5 level with focal spinal canal narrowing. Anaesthetic management of this patient has been discussed.*

Keywords: *Anaesthetic management, spinal stenosis, lumbar disc disease*

I. Introduction

Patients with preexisting neurologic disease present a unique challenge to the anesthesiologist. The cause of postoperative neurologic deficits is difficult to evaluate, because neural injury may occur as a result of surgical trauma, tourniquet pressure, prolonged labor, improper patient positioning, or anesthetic technique. The most conservative legal approach is to avoid regional anesthesia in these patients. However, high-risk patients, including those with significant cardiopulmonary disease, may benefit medically from regional anesthesia and analgesia. The decision to proceed with regional anesthesia in these patients should be made on a case-by-case basis. Meticulous regional anesthetic technique should be observed to minimize further neurologic injury. Patients with spinal canal pathology, including spinal stenosis and lumbar disk disease, are often not considered candidates for neuraxial blockade because of the risk of exacerbating preexisting neurologic deficits or developing new neurologic dysfunction.

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II. Case Report

A 43 year old female posted for Total Abdominal Hysterectomy with Bilateral Salpingo-oophorectomy came to department of Anaesthesiology for pre anaesthetic checkup. On careful evaluation the patient gave a history of low back ache since 3 years. She had a recent complaint of tingling sensation and a typical pain radiating to her left leg. She visited a specialist and was diagnosed having Sciatica. Her MRI report showed degenerative disc disease at lower lumbar region with mild disc bulge at L3-L4 level and diffuse disc bulge and central herniation at L4-L5 level with focal spinal canal narrowing. She had no other significant co morbidities.

On general examination, she was moderately built and moderately nourished. Her vitals were within normal limits. On airway examination, the nasal cavity, oral cavity and teeth were normal. Inter incissor distance was > 6cm, Thyromental distance was 6 cm, Mallampati grade was 1. Her temporomandibular joint movement and cervical spine movement were normal. Lumbar spine examination revealed tenderness on palpation. Central nervous system examination revealed decreased sensation for pain and temperature on the left leg. Plantar reflex on the left side was also diminished. Examination of all other systems were normal. Routine investigations were also within normal limits. The patient was given fitness for surgery and our plan of anaesthesia as general anaesthesia was discussed with patient and relatives and informed consent obtained. We decided to avoid regional anaesthesia in view of preexisting neurological deficit. The intra operative period was uneventful and the patient was recovered and shifted to postoperative ICU in a stable condition.

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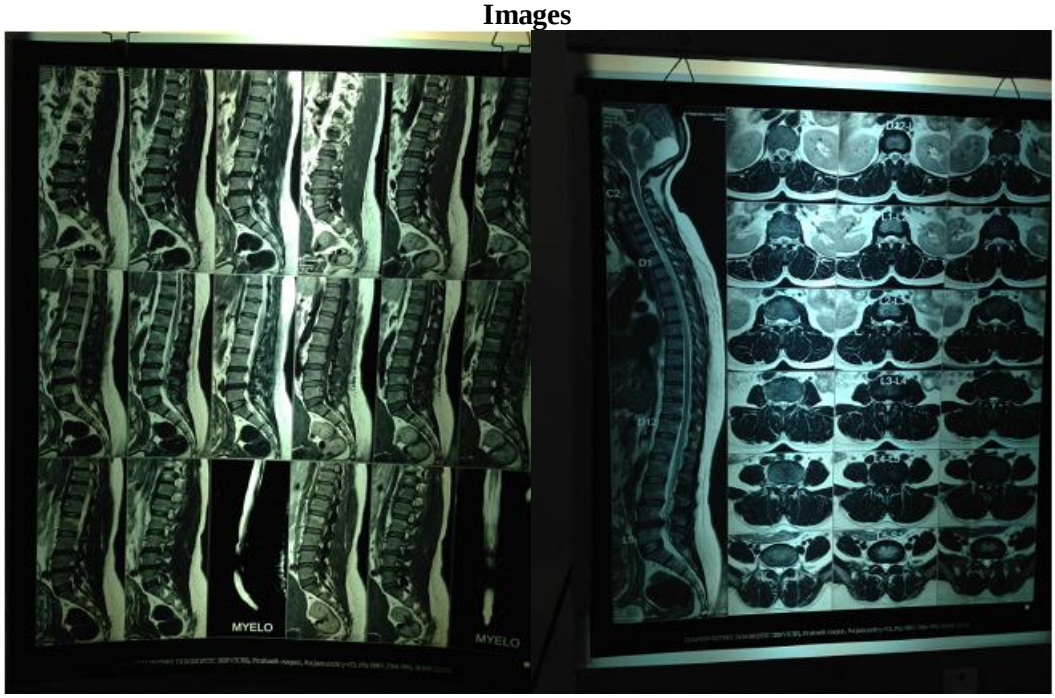
Images



III. Discussion

Neurological disease is considered to be a relative contraindication to regional anaesthesia, because of the difficulty in determining the cause of new neurological deficits that appear perioperatively. There are no controlled clinical studies identifying regional anaesthesia as a significant factor in increased risk of neurological injury, only anecdotal reports are available.The medicolegal issue, however, remains, and if regional anaesthesia is indicated for other pre-existing medical conditions or by patient request, the patient should be informed of the risk of neurological complications, including coincidental progression of preoperative deficits, associated with anaesthesia and surgery. This discussion, along with preoperative neurological status, should be fully documented in the patient's record.

Patients with preoperative neurological deficits may undergo further nerve damage more readily from needle or catheter placement, local anaesthetic systemic toxicity, and vasopressor-induced neural ischaemia. Neurological deficits after regional anaesthesia may be a direct result of local anaesthetic toxicity. Clinical and laboratory findings indicate that anaesthetic solutions are potentially neurotoxic. It is generally agreed that local anaesthetics administered in clinically appropriate doses and concentrations do not cause nerve damage. However, prolonged exposure to high concentrations of local anaesthetic solutions may result in permanent neurological deficits. Patients with underlying nerve dysfunction may have a decreased requirement for local anaesthetic and a decreased threshold for neurotoxicity.

Thus patients with preexisting neurologic disorders of the central nervous system, such as multiple sclerosis or amyotrophic lateral sclerosis, and those with disorders of the peripheral nerves, such as lumbar radiculopathy, ancient poliomyelitis, and sensory-motor peripheral neuropathy, present potential management dilemmas for anesthesiologists. The presence of preexisting deficits, signifying chronic neural compromise, theoretically places these patients at increased risk for further neurologic injury. It is difficult to define the actual risk of neurologic complications in patients with preexisting neurologic disorders who receive regional anesthesia. The decision to use regional anesthesia or general anaesthesia in these patients is determined on a case-by case basis and involves understanding the pathophysiology of neurologic disorders, the mechanisms of neural injury associated with regional anesthesia, and the overall incidence of neurologic complications after regional techniques.

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