

# A Case of Transverse myelitis posted for Pressure sore debridement

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**ABSTRACT**

Transverse myelitis (TM) is a rare neuro-inflammatory condition that tends to affect the thoracic level of the spinal cord, leading to acute to subacute onset weakness, impaired sensation, and autonomic dysfunction. We report a case of 19 year old man with transverse myelitis who underwent elective surgery under general anesthesia successfully.

**Key words:** General anesthesia, transverse myelitis

**INTRODUCTION**

The incidence of acute transverse myelitis (ATM) is 1-4 per 100,000 as reported in literature. ATM<sup>[1]</sup> is a pathogenetically heterogeneous inflammatory disorder of the spinal cord. Infections, irregularities like vascular, neoplastic, paraneoplastic, collagen vascular, and iatrogenic may lead to ATM. It<sup>[2]</sup> usually involves spinothalamic tract, pyramidal tracts, posterior columns and anterior fasciculi at one or more adjacent levels<sup>[3]</sup>.

**CASE REPORT**

A 19-year-old boy, diagnosed as a case of transverse myelitis, presented to us with a grade III pressure ulcer over sacral and bilateral greater trochanteric area. Detailed history revealed that three months back the patient had sudden onset of bilateral lower limb weakness, with associated bowel and bladder incontinence. He was managed with intravenous steroids followed by oral steroids, which were tapered accordingly. He continued oral prednisolone 50mg once daily. Patient had gradual improvement in power in both lower limbs, but the bilateral foot drop was still present. Motor power on examination at present was grade 4 at hip joint, 3 at knee and ankle joint bilaterally and decrease sensation below the umbilicus. The patient also had loss bowel control but regained after one month of starting of steroids therapy. The patient had urinary incontinence for three weeks after onset of ATM but since 3 weeks was able to self-void. The patient was posted for debridement of the large pressure sore over his sacral and bilateral greater trochanteric area.

Laboratory investigations such as complete blood count, liver and renal function test and magnetic resonance imaging was advised. All the laboratory investigations were within normal range. Magnetic resonance imaging revealed ill-defined long segment hyper intensity within cervico-dorsal cord.

Patient was advised to continue his medications. General anaesthesia was induced with propofol 2.0 mg/kg; fentanyl 2 µg/kg and dose of cis-atracurium is 0.2 mg/kg was used as muscle relaxation. As prone position was required for surgery so to maintain the airway with endotracheal intubation was done. A mixture of oxygen and nitrous oxide (40:60) with sevoflurane was used for maintenance of the anaesthesia. Standard-of-care monitoring and neuromuscular monitoring was carried out, in the form of train of four (TOF), throughout the surgery. BIS monitoring was done to avoid awareness intraoperatively. Throughout the procedure hemodynamic parameters remained stable. Blood loss was 300 ml. At the end of the surgery, anaesthetic gases were discontinued. After watching satisfactory TOF ratio the patient was reversed with neostigmine and glycopyrrolate and the patient was awakened.

A neurological examination was conducted to evaluate the motor and sensory functions postoperatively in recovery room. The

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findings were similar to preoperative findings. The patient was vigilantly monitored for any haemodynamic and neurological function deterioration at high dependency recovery room for next 24 hours. The postoperative period remained uneventful.

## DISCUSSION

The etiology of ATM is unknown in majority of cases. In 27-37 % of cases, it may occur following viral infection. [4]Berman et al., developed criteria for the diagnosis of ATM which included [5]:

- a. Sudden onset of paraparesis affecting motor and sensory system involving bowel and bladder.
- b. Spinal segmental level of sensory disturbance (patients with patchy sensory deficit or Brown Sequard syndrome were excluded).
- c. Stable, non-progressive course of disease.
- d. No evidence of spinal cord compression after clinical or laboratory investigations.
- e. Absence of other neurological disease, including malignant disease with metastasis, severe back trauma and encephalitis. Patients with irradiation of the spine also excluded.

Diagnosis can be made with magnetic resonance imaging of the spinal cord and cerebrospinal fluid analysis. To rule out the autoimmune and infectious etiology; blood and serological examination is useful. The first line of treatment of transverse myelitis is high dose of intravenous methylprednisolone. Literature describes other modalities of treatment like rituximab, mitoxantrone, cyclophosphamide, azathioprine, plasmapheresis, and intravenous immunoglobulin [5].

Patients with ATM may present to an anesthesiologist in the acute or chronic stages for surgery. Motor function, sensory level and autonomic dysfunction should be evaluated preoperatively and documented. Laboratory investigations like complete blood count and liver and renal function tests should be done preoperatively as the drug therapy can alter these tests. In the later stages, the patient may be suffering autonomic dysreflexia which manifests with exaggerated hypertension, reflex bradycardia, and other arrhythmias secondary to cutaneous and visceral stimuli. Awareness of these complications as well as strict vigilance perioperatively is mandatory. Appropriate drugs for emergency

management of hemodynamic alterations should be kept ready [6].

Due to lack of literature choice of anesthetic technique in these patients remains controversial. The decision to give general anesthesia in this patient was taken as case reports have attributed transverse myelitis due to spinal or epidural anesthesia. Regional anesthesia may worsen the neurological deficits or make them permanent [7,8]. In each individual case risks and benefits of performing regional anaesthesia in patients with pre-existing neurological deficits should be evaluated [9].

Succinylcholine was not administered in this case as it has been found to be associated with severe hyperkalaemia and its consequences. Neuromuscular monitoring was done as these patients have also been found to be extremely sensitive to non-depolarising muscle relaxants [9]. As stated earlier Pre- and Post-operative documentation of motor, sensory and autonomic function should be mandatory. The patient should be monitored for any haemodynamic alterations in a high-dependency recovery room postoperatively.

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