



# Rapid Onset of Relapsing Longitudinally Extensive Transverse Myelitis After Lumbar Spinal Surgery

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## Key words

- Longitudinally extensive transverse myelitis
- Postoperative

## Abbreviations and Acronyms

**ATM:** Acute transverse myelitis

**LETM:** Longitudinally extensive transverse myelitis

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Citation: World Neurosurg. (2022) 166:15–17.

<https://doi.org/10.1016/j.wneu.2022.06.142>

Journal homepage: [www.journals.elsevier.com/world-neurosurgery](http://www.journals.elsevier.com/world-neurosurgery)

Available online: [www.sciencedirect.com](http://www.sciencedirect.com)

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## CASE REPORT

A 58-year-old woman with systemic lupus erythematosus and acute transverse myelitis (ATM) underwent plasmapheresis 16 years ago and then achieved total recovery after pulse therapy and plasmapheresis. The patient had lower back pain for 1 year after contusion with the diagnosis of spondylolisthesis of L3/4. After decompression, fusion, and transpedicular screw fixation surgery, the patient's symptoms abated and she walked without assistance; however, sudden onset of T6 paraplegia developed 3 days postoperatively. T2-weighted magnetic resonance imaging revealed a poorly delineated hyperintense lesion extending from T2 to L1. Compared with the magnetic resonance imaging of the first episode 16 years ago (Figure 1A), there was more extensively hyperintense and swelling on thoracic spinal cord this time (see Figure 1B and C).

Examination of the intrathecal cerebrospinal fluid revealed elevated protein levels (70.5 mg/dL) and the immunoglobulin G

A 58-year-old woman experienced relapsing acute longitudinally extensive transverse myelitis that developed rapidly in 3 days after lumbar surgery. The patient had a history of systemic lupus erythematosus with acute transverse myelitis and had undergone plasmapheresis 16 years ago. New neurologic deficits including paraplegia of the lower limbs, sensory alterations, and bowel incontinence presented 3 days postoperatively. Magnetic resonance imaging revealed a long-segment hyperintense signal over the thoracic spine on T2-weighted imaging. Intravenous pulse therapy with high-dose corticosteroid was first used for 5 days but was ineffective. Plasmapheresis after pulse therapy resulted in improved neurologic deficit. The patient then underwent 6 months of rehabilitation therapy but was partially wheelchair bound. She no longer had bladder and bowel incontinence.

index was 0.56. Accordingly, ATM with longitudinally extensive transverse myelitis (LETM) was diagnosed and the patient underwent pulse therapy with methylprednisolone. Unfortunately, the T6 paraplegia persisted. Subsequently, plasmapheresis was performed 5 times within 1 week after pulse therapy. She had mild improvement after plasmapheresis. After 6 months' rehabilitation, she had improvement on her muscle power of the lower limbs in partially wheelchair-dependent status. She had minimally functional dependence with intact micturition and defecation.

ATM is an acquired neuroimmune spinal cord disorder in multiple segments. Relapsing ATM is extremely rare and has been reported to be associated with infectious or connective tissue diseases.<sup>1</sup> Like idiopathic ATM, the relapse may occur postoperatively, leading to a more severely persistent disability.<sup>2</sup> Moreover, LETM, the most devastating type of relapse, involves the central nervous system and extends beyond 4 vertebrae on neuroimaging, with a corresponding extensive level of neurologic sequelae.<sup>3</sup> There have been published reports on postoperative ATM. The application of recent criteria to these patients was reasonable.<sup>4</sup> Due to the rapid progression and severity of the neurologic deficit, pulse therapy alone or

delaying plasmapheresis is not recommended.<sup>5,6</sup> On the basis of our experience, in cases of relapse, plasmapheresis should be performed as soon as possible in the acute stage and must be combined with high-dose steroid.<sup>7,8</sup> Despite the aggressive intervention, patients with relapsing ATM or LETM are seemingly liable to become severely disabled.<sup>1</sup>

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*Conflict of interest statement:* The authors declare that the article content was composed in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Received 29 May 2022; accepted 29 June 2022

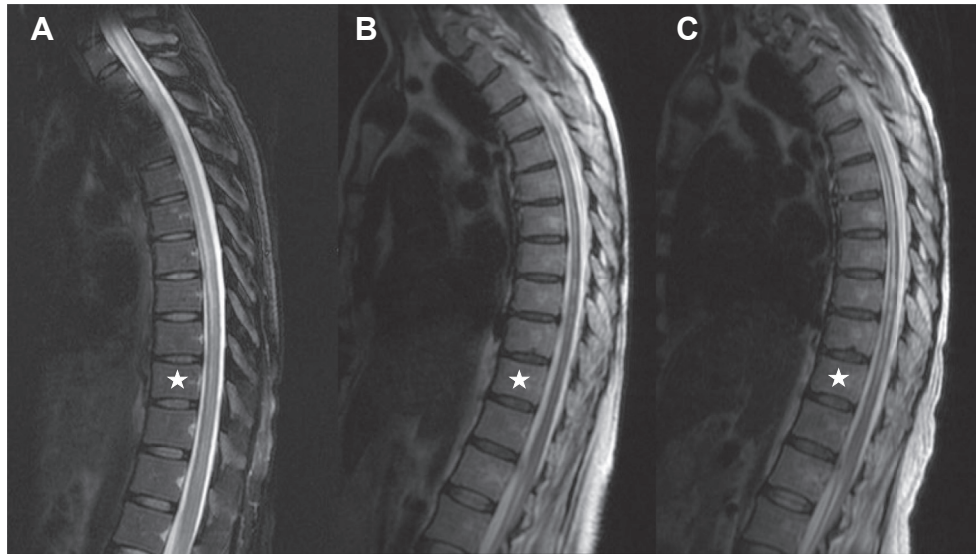
*Citation:* *World Neurosurg*. (2022) 166:15-17.

<https://doi.org/10.1016/j.wneu.2022.06.142>

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**Figure 1.** The series of T2-weighted sagittal plane magnetic resonance imaging (MRI) of the thoracic spine as follows: **(A)** hyperintense lesion over the thoracic spine above T9 with diagnosed SLE and acute

transverse myelitis approximately 16 years ago; **(B)** MRI for lower back pain 1 month before surgery; and **(C)** delineated hyperintense lesion extending from T2 to L1 just 1 week after surgery.