Teenager Presenting with Isolated Urinary Retention: What Lies Beneath?

Crisbety Pinho[1], Carmen do Carmo[2], Sílvia Carvalho[3], Filipe Palavra[1,4,5]

Port J Pediatr 2022;53:457-8
DOI: https://doi.org/10.25754/pjp.2022.24579

A previously healthy 12-year-old girl was admitted to the emergency department due to acute urinary retention. Despite bladder fullness sensation, she had overflow incontinence and constant urinary urgency, with hypogastric pain, but no dysuria, hematuria, or motor or sensory deficits. A physical examination revealed a palpable tense full bladder. A neurological assessment did not disclose any focal deficits beyond sphincter changes.

The initial laboratory data included the complete blood count, C-reactive protein, electrolytes, renal and liver function tests, and urinalysis (normal). Renal and abdominal ultrasound showed a distended bladder (770 mL) without parietal changes. Spinal magnetic resonance imaging (MRI) disclosed two longitudinally extensive spinal cord lesions (C4-T1 and T10-L1) (Fig. 1). The brain MRI that was performed was normal. Cerebrospinal fluid was collected in a traumatic puncture, revealing elevated erythrocytes (100 cells/µL), pleocytosis (50 cells/µL, mostly mononuclear), proteins of 54 mg/dL (15-40 mg/dL), and normal glucose (49 mg/dL). An extensive evaluation was negative, including blood culture, immunology testing, aquaporin-4, and myelin oligodendrocyte glycoprotein autoantibodies, and, in a cerebrospinal fluid sample, oligoclonal bands and bacteriological culture. She was treated with intravenous methylprednisolone (1 g/day for five days) and urinary rehabilitation, with fully recovery after two months.

We concluded the diagnosis of an isolated idiopathic longitudinally extensive myelitis, which could not be (yet) considered a transverse myelitis (due to the absence of motor and sensory deficits), most likely because it was diagnosed early. If it would not have been caught early, the patient could have evolved into a transverse myelitis, a rare immune-mediated inflammatory disorder of the spinal cord (affecting the cervical/cervicothoracic region in 64%-76% of cases),[1] with an annual incidence of 0.2 per 100,000 children.[1,2] Longitudinally extensive transverse myelitis, defined as extending across three or more vertebral segments, is thought to be more frequent in children (66%-85%).[1,3] It can occur associated with other acquired demyelinating syndromes, including acute disseminated encephalomyelitis and neuromyelitis *optica* spectrum disorders.[3,4]

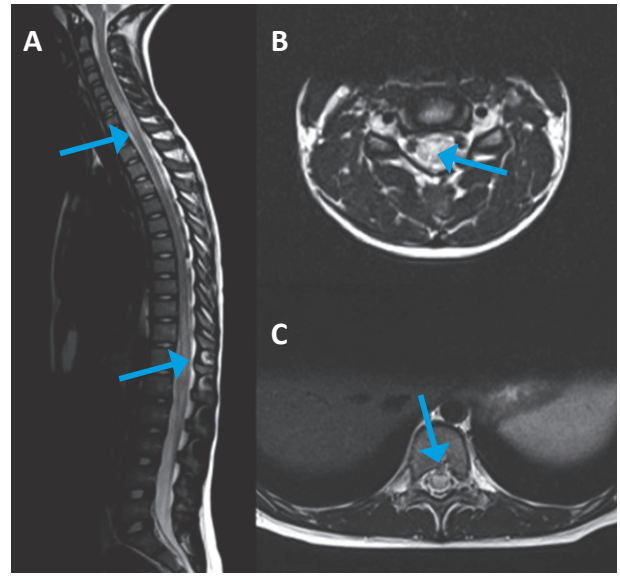

Figure 1. A. Sagittal T2-weighted image showing two hyperintense medullary lesions at C4-T1 and T10-L1 levels (arrows), with swelling of the spinal cord. B. Axial T2-weighted image at the level of C6 showing an eccentric lesion (arrow). C. Axial T2-weighted image at the level of L1 demonstrating a centrally located lesion, with increased signal intensity occupying more than two thirds of cross-sectional area of the cord (arrow). No abnormal enhancement was observed after gadolinium intravenous administration (images not shown).

Keywords: Adolescent; Myelitis/diagnosis; Myelitis/diagnostic imaging; Magnetic Resonance Imaging; Urinary Retention/etiology

1. Centre for Child Development, Neuropediatrics Unit, Hospital Pediátrico, Centro Hospitalar e Universitário de Coimbra, Coimbra, Portugal
2. Nephrology Unit, Hospital Pediátrico, Centro Hospitalar e Universitário de Coimbra, Coimbra, Portugal
3. Neuroradiology Unit, Medical Image Department, Centro Hospitalar e Universitário de Coimbra, Coimbra, Portugal
4. Coimbra Institute for Clinical and Biomedical Research, Faculdade de Medicina, Universidade de Coimbra, Coimbra, Portugal
5. Pediatrics Department, Clinical and Academic Centre of Coimbra, Coimbra, Portugal

Corresponding Author
Crisbety Pinho
https://orcid.org/0000-0002-0877-214X
crisbetypinho@gmail.com
Avenida R. Dr. Afonso Romão, 3000-602 Coimbra, Portugal

Received: 11/05/2021 | Accepted: 30/09/2021 | Published online: 03/01/2022 | Published: 03/01/2022

WHAT THIS REPORT ADDS

- Isolated acute myelitis is a rare neuro-inflammatory spinal cord disorder.
- Symptoms that should lead a clinician to consider an acute myelopathy include weakness, sensory loss (with an identifiable level), bowel/bladder incontinence, and/or urinary retention.
- The diagnosis requires the exclusion of a compressive cord lesion, usually by magnetic resonance imaging and confirmation of the existence of inflammation by either gadolinium-enhanced magnetic resonance imaging or lumbar puncture.
- Although most patients with acute myelitis experience a monophasic disease, it is important to consider that this may be the first manifestation of a possible inflammatory condition that progresses with relapses, which is why it is very important to regularly monitor such patients.
- A multidisciplinary approach is essential for reaching the correct diagnosis and monitoring these children in the long term.

Conflicts of Interest

The authors declare that there were no conflicts of interest in conducting this work.

Funding Sources

There were no external funding sources for the realization of this paper.

Provenance and peer review

Not commissioned; externally peer reviewed

Consent for publication

Consent for publication was obtained.

Confidentiality of data

The authors declare that they have followed the protocols of their work centre on the publication of patient data.

References

1. Absoud M, Greenberg BM, Lim M, Lotze T, Thomas T, Deiva K. Pediatric transverse myelitis. Neurology 2016;87:S46-52. doi: 10.1212/WNL.0000000000002820.

2. Theroux LM, Brenton JN. Acute transverse and flaccid myelitis in children. Curr Treat Options Neurol 2019;21:64. doi: 10.1007/s11940-019-0603-0.

3. Kitley JL, Leite MI, George JS, Palace JA. The differential diagnosis of longitudinally extensive transverse myelitis. Mult Scler 2012;18:271-85. doi: 10.1177/1352458511406165.

4. Helfferich J, Bruijstens AL, Wong YYM, Danielle van Pelt E, Boon M, Neuteboom RF. Prognostic factors for relapse and outcome in pediatric acute transverse myelitis. Brain Dev 2021;43:626-36. doi: 10.1016/j.braindev.2020.12.019.