

Meningitis With Acute Urinary Retention Syndrome In Young Adult (Case Report)

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1. Abstract

Meningitis with Acute Urinary Retention Syndrome in Young Adult (MRS) is a rare monophasic idiopathic inflammatory condition, coined in 2005 by Sakakira [2], characterised by lymphocytic meningitis and acute urinary retention. The condition is not well recognised due to the scarce literature mainly with case reports mostly from Japanese literature and a few reviews. We report a case of MRS in a young adult who challenged our triaging practice. Clinical presentation, differential diagnosis and management are discussed highlighting the importance of early triaging of young adults with acute urinary retention.

2. Case presentation

A 28 years old healthy man presented to our hospital with fever, headache, fatigue, and shivering. The neurological status was initially unremarkable and the patient was assumed to have a random viral infection and discharged with conservative treatment. The patient returned after a few days because of persisting symptoms and difficulty to urinate. He delayed excessively in the toilet failing to void normally. However he did not appear to experience any urinary urgency. The ultrasound examination showed 650 ml of residual urine and the urethra was catheterised with a foley catheter. The patient was alert and keenly responsive and the neurological exam revealed mild nuchal rigidity and sharp reflexes. Work-up was also unremarkable and total body CT reported normal findings. LP was performed and CSF analysis showed 100 cell/ml lymphocytic pleiocytosis. Cultures were negative and serology for HSV, WNV,TBC,VZV, EBV, CMV was negative. Dexamethasone (32 mg/d), acyclovir (750 mg/d), and ceftriaxone (4g/d) were started. The patient

became afebrile and urination improved gradually. The catheter was removed on discharge after 7 days and residual urine gradually decreased. He was prescribed tapering doses of steroids at discharge. A month later urination was normal and the patient was symptom-free.

3. Discussion

Meningitis with Acute Urinary Retention Syndrome in Young Adult (MRS) was coined in 2005 by Sakakira [2], with case reports appearing as soon as 1980 in the Japanese literature. The salient feature of this syndrome is unexplained acute urinary retention especially in young adults. Acute urinary retention (AUR) is a medical urgency due to acute painful inability to void the bladder. Its incidence increases with age and by far the most common cause is obstructive pathologies including benign prostatic hypertrophy. Other causes include lesions of CNS, pelvic trauma, retroperitoneal and rectal formations, viral infections, anaesthesia, congenital abnormalities, drugs etc (Tab). Progressive obstructions lead to dilatation of the bladder, decreased urine flow velocity, and increased urination frequency. MRS is a rare cause of AUR characterised by an idiopathic lymphocytic meningitis sometimes described synonymous to aseptic meningitis. Aseptic meningitis, however, infers non-infectious inflammatory causes including sarcoidosis, Behcet disease, NSAIDS and malignancy [1]. Moreover, MRS by definition has no identifiable infectious culprit although it has been associated with prodromal viral infections [2]. The incidence of MRS remains unknown, and likely underreported. It affects mainly young adults without sex predilection.

The pathological mechanisms remains unclear although several cases have reported increased levels of Basal Myelin Protein suggesting an inflammatory demyelinating process predominantly affecting the sacral spinal segments. Mechanisms similar to ADEM triggered by a viral infection have been postulated [3,4]. The typical clinical presentation has a prodrome of fever, headaches and meningeal symptoms with urinary symptoms emerging on average 6 days after the prodrome. Encephalitic signs are absent and the neurological exam is usually unremarkable except for mild nuchal rigidity and brisk tendon reflexes. The CSF shows pleiocytosis varying from 40 up to 700 cells per mm³, mild proteinorachia and normal glucose levels. Microbiological investigation including PCR and Cultures are negative but a few cases have tested positive for viral infections. Brain and spine imaging studies with contrast media are normal and help to rule out myelopathies and many inflammatory conditions of CNS including ADEM whose hallmark is demyelinating lesion of the CNS with a monophasic course [6].

The diagnosis of MRS is one of exclusion. The neurological symptoms including the meningeal signs can be subtle as in our case, and the diagnosis

is usually made when the urinary symptoms are prominent appearing insidiously several days after the start of meningeal signs while sensory and motor function of lower limbs is spared. The differential diagnosis is wide, but Elsberg syndrome in particular, which is characterised by acute urinary retention, constipation, erectile dysfunction, herpetic genital eruption, and neuropathic pain, needs to be ruled out [5]. It is a HSV infection affecting the sacral spinal cord which correlates with T2 hyper intense MRI lesions. The clinical course is typically characterised by a gradual improvement of the detrusor function and a relatively quick response of meningeal signs from cortisone therapy. However it is believed that MRS is a self-limited disease and commonly applied therapies including antibiotics, antivirals and corticosteroids do not significantly impact the clinical course. In conclusion, acute urinary retention in young adults should receive particular attention. In such cases besides other routine tests lumbar puncture should be strongly recommended. Timely spinal puncture and CSF exam in a young patient presenting with unexplained urinary retention could lead to a faster diagnosis and better response to therapy. Since our knowledge in its pathophysiology remain limited, further studies aimed to improve our understanding of its pathophysiology are warranted.

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