

Acute Urinary Retention due to Aseptic Meningitis: Meningitis-Retention Syndrome

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Acute urinary retention in aseptic meningitis is rarely encountered, and the diagnosis of aseptic meningitis may be less than straightforward, because its symptoms and neurological signs are occasionally mild or absent. We report a case in which acute urinary retention provided an appropriate indication for the diagnosis of aseptic meningitis as the cause of an undiagnosed fever.

Key Words: Acute urinary retention; Meningitis-retention syndrome; Aseptic meningitis

Acute urinary retention has several etiologies and may be accompanied by a benign inflammatory nervous disease [1]. These nervous diseases can be divided into peripheral nervous diseases, such as sacral herpes, and central nervous diseases, such as meningitis-retention syndrome [2]. The latter can be defined as the co-occurrence of aseptic meningitis and acute urinary retention without any other disease that might cause urinary retention [3]. However, the typical symptoms and neurological signs of aseptic meningitis are occasionally mild or even absent, and the condition can be difficult to diagnose early. We experienced a case in which acute urinary retention provided a critical clue to the diagnosis of aseptic meningitis as a cause of undiagnosed fever. Here, we report this case and review the literature.

Case

A 30-year-old man was admitted to the department of internal medicine in our hospital with

fever and a mild headache that had occurred four days earlier. There were no notable findings in his past history, including trauma or upper respiratory tract infection. At admission, his blood pressure, respiratory rate, and heart rate were normal, but his body temperature was 38.3°C. No abnormalities were observed in the neurological examination. The results of initial blood tests including white blood cell count, erythrocyte sedimentation rate, C-reactive protein, and urinalysis were normal. In addition, the findings of both blood and urine culture examinations were negative. On the 2nd day after admission, the patient suddenly presented with voiding difficulty and severe suprapubic pain. A physical examination revealed lower abdominal distention, and 700 cc of urine was drained by inserting a Nélaton catheter into the urethra. The patient was referred to urologist and the authors evaluated the cause of the acute urinary retention. There were no abnormal findings in the patient's medical history, including urine retention, urethral stricture, hematuria, diabetes, or a history of uro-

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logical surgery or drug use, and there were also no abnormal findings in the urologic physical examination. In the digital rectal examination, the size and shape of the prostate, extent of hardness, and tenderness when palpated were normal, and no constipation was observed. The bulbocavernous reflex was intact, and no numbness or skin lesions of the perineum were observed. On the transrectal ultrasonography, the shape of the prostate and seminal vesicles and the continuity of the prostate capsule were normal and prostate volume measured 19 cc. In the uroflowmetry test, because the patient failed to have voided and his residual urine volume measured 900 cc, urethral catheter insertion was immediately performed with a 12 Fr Foley catheter. The removal of the urethral catheter was considered after about a week, and an α -blocker was allowed to be used. In addition, we explained to the attending physician the possibility that acute urinary retention might accompany aseptic meningitis and the need to evaluate this. Accordingly, on the 4th day of admission, to find the cause of the fever, a lumbar puncture was performed in the department of internal medicine and lymphocytic pleocytosis (439 cells/mm³ with 90% mononuclear WBC) was found in the CSF. Glucose, proteins, bacterial culture, mycobacterial tuberculosis polymerase chain reaction tests, and acid-fast bacteria tests in the CSF showed no abnormal findings. Spine and brain MRI showed no abnormal findings. As a result of the CSF examination, the cause of the persistent fever was explained and the patient was treated in accordance with aseptic meningitis. On the 6th day of the urethral catheter implantation, under the request of the patient, the urethral catheter was removed. Starting one day before the removal of the catheter, the patient began to take an α -blocker (Tamsulosin HCL 0.2 mg). After the removal of the catheter, the patient completed voiding for himself and his residual urine volume was measured as 190 cc on the bladder scan. Because he presented with urinary tenesmus and a weak stream, to clear the residual urine, he was trained to conduct clean intermittent catheterization three times a day. For persistent voiding symptoms, we explained the need for a ur-

odynamic study to the patient, but he did not consent to the study. On the 10th day after admission, his fever subsided and his voiding symptoms were mostly improved. Because his residual urine volume measured 15 cc, clean intermittent catheterization was discontinued. On the 14th day after admission, the patient was discharged from our hospital and an α -blocker was not prescribed at discharge. Three weeks after discharge, when the patient visited the department of urology, he no longer complained of voiding symptoms and his residual urine volume measured 0 cc.

Discussion

Acute urinary retention referring to the state of not being able to dispose of urine by oneself is caused by bladder outlet obstruction and impaired detrusor muscle contractility and is prevalent in the old and rare in children and adolescents [4]. Here we reported a case of acute urinary retention that accompanied aseptic meningitis in a healthy young individual. Aseptic meningitis is a common neurological disorder, but it is not commonly known that acute urinary retention can accompany aseptic meningitis as a symptom or complication. Like this case, with no other cause of acute urinary retention, the occurrence of acute urinary retention together with aseptic meningitis is called meningitis-retention syndrome [3].

In addition to this case, we previously experienced a meningitis-retention patient. The patient showed signs of meningeal irritation such as fever, headache, nuchal rigidity, and Brudzinski and Kernig signs. In the CSF examination, mononuclear dominant lymphocytic pleocytosis was observed, so he was admitted to the department of neurology. During treatment, acute urinary retention occurred, so he was referred to urology. A urethral catheter was placed by a urologist and in a week, voiding was completed after the removal of the catheter. As in this case, if the clinical symptoms do not suggest aseptic meningitis, the time of diagnosis and treatment can be reduced through prompt CSF examination. However, in a case without meningeal irritative symptoms such

as nuchal rigidity or Brudzinski and Kernig signs, the diagnosis of aseptic meningitis can be difficult if only undiagnosed fever is present. Therefore, if acute urinary retention occurs in a young person with undiagnosed fever, we propose that meningitis-retention syndrome be considered, and we believe that the acute urinary retention provided an important clue in the diagnosis of aseptic meningitis in the present case.

It is known that acute urinary retention accompanied by aseptic meningitis occurs in healthy young people after about 9 days of meningitis symptoms [4]. After acute urinary retention, the time for perfect recovery of voiding difficulty has been reported to average 10 [5] or 32 days [6]. Meningitis-retention syndrome is self-limited, and no evidence suggests that any treatment affects its clinical course. Therefore, it is sufficient to explain favorable progress of acute urinary retention as a urologic emergency and urethral catheterization as the only primary treatment.

Urodynamic study of meningitis-retention syndrome shows an atonic or hypotonic neurogenic bladder and intact bladder sensation during the bladder filling phase. Thus, impaired bladder contractility is an important mechanism in voiding difficulty and urine retention [7]. The cause of meningitis-retention syndrome is obscure but it has been reported that, as the cause of neurogenic bladder associated with aseptic meningitis, sacral myeloradiculitis due to a direct viral inflammation and the process of post-infectious inflammatory demyelination in the peripheral or central nervous system are related [8].

In conclusion, urologists should be aware that acute urinary retention with aseptic meningitis is a rare but important manifestation and explain to

the patient that immediate placement of a urethral catheter or clean intermittent catheterization is necessary and that urinary retention has a good prognosis. As in this case, aseptic meningitis with undistinguished meningeal irritative symptoms, such as not having any symptoms other than fever, is difficult to diagnose. However, when acute urinary retention occurs in young people, aseptic meningitis must be considered as a cause of fever.

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