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RESEARCH ARTICLE

ASEPTIC MENINGITIS WITH URINARY RETENTION: A CASE REPORT

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ABSTRACT

Aseptic meningitis is serious inflammation of the meninges caused by agents including viruses, non-viral pathogens, non-infectious conditions and chemicals. This study concerns the case of a 37years old healthy male with persistent fever, severe headache, neck pain and acute urinary retention with overflow. Examination revealed minimal nuchal rigidity with no other CNS signs. The urinary bladder was palpable and non-tender. The patient showed improvement with symptomatic treatment and his urinary symptoms improved with Alpha blockers and Bethenechol.

INTRODUCTION

Aseptic meningitis is serious inflammation of the meanings caused by non-bacterial agents including viruses, non-viral pathogens, and non-infectious conditions such as systemic lupus erythematosus, leukemia, lymphoma, and non steroidal anti-inflammatory drugs (NSAIDs) and other chemicals. Enteroviruses are responsible for more than 90% of aseptic meningitis cases. However, other viruses including flavivirus, herpesvirus, and mumps can cause meningitis (Irani, 2008). In the majority of cases, patients are admitted with fever, headache, a stiff neck, nausea, and vomiting. However, patients can present with a variety of symptoms ranging from asymptomatic pleocytosis in the cerebrospinal fluid (CSF) to a serious neurological deficiency. This paper presents the case of a healthy immune competent male patient with acute urinary retention secondary to aseptic meningitis. The combination of urinary retention and meningitis is described in the literature, but it is considered uncommon.

CASE PRESENTATION

A 37 years old immune competent adult patient presented with history of fever for last one week associated with headache and upper neck pain more so on lying down during the night. Fever was low to moderate grade with no associated chills and rigors. It would respond to oral administration of paracetamol. There was no specific pattern to the fever. The headache would be severe, mostly localized to occipital region and upper neck area, associated with nausea and would not respond to paracetamol and NSAIDs. Examination revealed a moderately built patient with a temperature of 37.5 C. The general physical examination didn't reveal any abnormality. There was terminal neck stiffness. The rest of the CNS examination was normal. The urinary bladder was distended and palpable and non-tender. There were no findings in the rest of the systemic examination. Hematology was as follows: haemoglobin 14.8 g/dL, haematocrit 42.7%, white blood cells 9400/mm3 (68% polymorphonuclears, 30% lymphocytes, 01% monocytes, and 01% eosinophils), and platelets 232000/mm3. C-reactive protein was normal (<0.50 mg/dl). Serum biochemistry was normal with the exception of a minimal elevation in AST (38 U/L) and ALT (47 U/L). WIDAL and MP test were negative. Urine culture didn't show any growth. The patient's Chest X-ray was also normal. Brain imaging in the form of MRI brain and MR Angio of brain was also normal with no evidence of raised ICP or meningeal enhancement or hydrocephalous. No evidence of any Aneurysm or AVM was found on MR Angio. In view of the presence of fever, headache and a negative fever workup for usual infections, a lumbar puncture was performed. The CSF cells were recorded as 200/mm3 (90% lymphocytes, 10% neutrophils) protein was normal (21 mg/dl), and glucose was reduced (54 mg/dl), with serum glucose at 128 mg/dl. CSF adenosine deaminase (ADA) was normal (8.82 U/L) Gram staining of the CSF was negative for microorganisms, and an India ink test was negative for Cryptococcus, AFB stain for tuberculosis was negative. On admittance, the patient was started on antimicrobial treatment with ceftriaxone. A sonogram was done which showed a post void residual urine of 337ml. A urology consult was taken for his urinary symptoms and he was diagnosed with urinary retention with

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overflow and was put on Alpha blocker Silodosin 8mg and Bethanechol 25mg thrice a day He started showed improvement in urinary symptoms after a few days. A repeat sonogram for urinary retention done after 3 days and didn't show any significant residual urine. The patient became afebrile after 12 days of start of symptoms with a marked reduction in headache severity and was discharged.

DISCUSSION

Meningitis is a clinical syndrome characterized by inflammation of the meninges. Clinically, meningitis manifests with meningeal symptoms (eg, headache, nuchal rigidity, or photophobia), as well as pleocytosis (an increased number of white blood cells [WBCs]) in the cerebrospinal fluid (CSF). Meningitis can be caused by bacteria (40%), viruses (45-50%), tuberculosis (5%) and rarely parasites. Meningitis can be caused by non-infectious causes too. Aseptic meningitis is inflammation of the meninges caused by non-bacterial agents including viruses, non-viral pathogens, and non-infectious conditions such as systemic lupus erythematosus, leukemia, lymphoma, and nonsteroidal anti-inflammatory drugs (NSAIDs) and other chemicals. Aseptic meningitis is one of the most common infections of the meninges. Enteroviruses are responsible for more than 90% of aseptic meningitis cases. However, other viruses including flavivirus, herpesvirus, and mumps can cause meningitis. In the majority of cases, patients are admitted with fever, headache, a stiff neck, nausea, and vomiting. However, patients can present with a variety of symptoms ranging from asymptomatic pleocytosis in the cerebrospinal fluid (CSF) to a serious neurological deficiency.
This paper presents the case of a 37 yrs old male patient with persistent fever, headache and urinary retention. The clinical symptoms such as fever, headache, and stiff neck are typical manifestations of meningitis. Furthermore, the lymphocyte cell types in the CSF analysis suggested aseptic meningitis rather than bacterial. Urinary retention, secondary to meningitis, is rarely encountered but has been described in the literature. The majority of cases have been attributed to viruses; the exceptions are one case caused by Listeria (Fujita *et al.,* 2008) and two cases of meningococcal meningitis (Kirkpatrick *et al.,* 1994; Elechi, 1988). Herpes virus is the most common cause of meningitis associated with urinary retention (Steinberg *et al.,* 1991; Erol *et al.,* 2009; Jensenius, *et al.,* 1997; Vonk, 1993).

The most probable mechanism of urinary retention in such cases is the direct involvement of pelvic nerves, with subsequent detrusor areflexia (Sakakibara *et al.,* 2006; Sakakibara *et al.,* 2005). A generic sacral or subsacral lesion can lead to an acontractile detrusor, incompetent urethra, and loss of bladder sensation. Viral infection of the sacral roots, predominantly attributed to HSV infection, can lead to reversible urinary retention by causing localized lumbosacral meningomyelitis or infectious neuritis of the pelvic nerves (Oates and Greenhouse, 1978). It is likely that this was the mechanism underlying the retention in this case, although an urodynamic control was not performed. Symptoms associated with meningitis such as disturbance of consciousness, hypesthesia, weakness and disturbed reflexes of the lower extremities, fecal incontinence, tetraparesis, and diplopia were absent. Therefore, the bladder dysfunction could not be attributed to a consciousness level disturbance (Urakawa and Ueda, 2001; Kawamura *et al.,* 2007). The pathogenesis is uncertain; direct infection and par infectious mechanisms could have played a role. Various hypotheses regarding the mechanisms underlying viral transportation from the circulatory system to the nervous system have been suggested recently and include moving through damaged endothelium, direct infection of the endothelial cells, and ligation through migrating leukocytes. As in other cases, the patient was previously healthy, and developed acute urinary retention six days after the onset of symptoms relating to meningitis, while urinary retention was resolved only after complete recovery from the meningitis symptoms (Zenda *et al.,* 2002; Shimizu, *et al.,* 2009).

Conclusion

There are few reports concerning aseptic meningitis with acute urinary retention. Several of such cases concern meningitis-retention syndrome, which affects the central nervous system, while others include an underlying peripheral nerve system mechanism. It appears that the present case belongs to the latter group, with a transient viral lesion of the sacral nerves being involved in the urinary retention. Further investigation is required to elucidate the exact mechanism underlying the retention and for optimum treatment of such cases.

REFERENCES

Irani, D. N. 2008. "Aseptic meningitis and viral myelitis," *Neurologic Clinics,* vol. 26, no. 3, pp. 635–655.

Fujita, K. T. Tanaka, S. Kono et al., 2008. "Urinary retention secondary to Listeria meningitis," *Internal Medicine,* vol. 47, no. 12, pp. 1129–1131.

Kirkpatrick, M., R. J. Brooker, P. J. Helms, and G. F. Cole, 1994. "Spinal cord dysfunction in neonatal meningococcal meningitis," European Journal ofPediatrics, vol. 153, no. 5, pp. 367-368.

Elechi, C. A. 1988. "A case of meningococcal meningitis with unusual complications," Tropical and Geographical Medicine, vol. 40, no. 4, pp. 353–355.

Steinberg, J., D. B. Rukstalis, and M. A. Vickers, 1991. "Acute urinary retention secondary to Herpes simplex meningitis," *Journal of Urology,* vol. 145, no. 2, pp. 359-360.

Erol, B., A. Avci, C. Eken, and Y. Ozgok, 2009. "Urinary retention, erectile dysfunction and meningitis due to sacral herpes zoster: a case report and review of the literature," Urologia Internationalis, vol. 82, no. 2, pp. 238–241.

Jensenius, M., B. Myrvang, and G. Starvold, 1997. "Aseptic meningitis associated with primary genital herpes infection," Tidsskrift for den Norske Laegeforening, vol. 117, no. 16, pp. 2316–2318.

Vonk, P. 1993. "Elsberg syndrome: acute urinary retention following a viral infection," Nederlands Tijdschriftvoor Geneeskunde, vol. 137, pp. 2603–2605.

Sakakibara, R., T. Yamanishi, T. Uchiyama, and T. Hattori, 2006. "Acute urinary retention due to benign inflammatory nervous diseases," *Journal of Neurology,* vol. 253, no. 8, pp. 1103–1110.

Sakakibara, R., T. Uchiyama, Z. Liu et al., 2005. "Meningitis-retention syndrome: an unrecognized clinical condition," *Journal of Neurology,* vol. 252, no. 12, pp. 1495–1499.

Oates, J. K. and P. R. D. H. Greenhouse, 1978. "Retention of urine in anogenital herpetic infection," The Lancet, vol. 1, no. 8066, pp. 691–692, 1978.

Urakawa M. and Y. Ueda, 2001. "A case of urinary retention secondary to aseptic meningitis," Brain and Nerve, vol. 53, no. 8, pp. 742–746.

Kawamura, M., H. Kaku, N. Takayama, T. Ushimi, and S. Kishida, 2007. "Acute urinary retention secondary to aseptic meningoencephalitis in an infant case report," Brain and Nerve, vol. 59, no. 11, pp. 1287–1291.

Zenda, T., R. Soma, H. Muramoto et al., 2002. "Acute urinary retention as an unusual manifestation of aseptic meningitis," Internal Medicine, vol. 41, no. 5, pp. 392–394.

Shimizu, Y., S. Yamamoto, K. Inoue et al., 1999. "Two cases of urinary retention secondary to aseptic meningitis," Hinyokika Kiyo, vol. 45, no. 6, pp. 435–437.

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