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CASE REPORT

Zoster sine herpete causing voiding disorders in females

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Introduction

Herpes zoster is caused by the reactivation of Varicella-Zoster virus and is classically characterized by unilateral vesicular rash and burning pain in the dermatomal distribution. Zoster sine herpete represents an atypical course of herpes zoster without skin involvement. The lifetime incidence rate of HZ in the general population is 10–20% [1]. It is known that voiding dysfunctions develop in ~4% of HZ patients and are associated with the involvement of sacral dermatomes [2]. Common voiding disorders include dysuria, frequent urination, urinary retention and overflow incontinence. More than 150 cases of HZ-associated voiding dysfunction have been reported; however, no cases of ZSH-associated voiding disorders have been described yet.

Case report

A 35-year-old woman with nonsignificant past medical history presented to the urologic department with a 1-year history of urinary urgency, frequency and nocturia that hadn't responded to multiple courses of antibiotics. During the last year she experienced three episodes of burning pain in the intergluteal cleft lasting for 7–10 days. The pain was 6/10 in severity and didn't travel anywhere. NSAIDs partially alleviated the pain. During the physical examination no rash was found. Pelvic examination was unremarkable. According to the 3-day bladder diary she voided a median volume of 110 ml 12.5 times daily and 4 times nightly. Complete blood count, biochemical blood analysis, urinalysis and urine culture revealed no abnormalities. Urinary tract ultrasonography was normal, post-void residual volume was 30 ml. Microbiome composition of urogenital tract was normal and PCR tests of urethral swab for HSV types 1 and 2, Epstein–Barr virus, and cytomegalovirus were negative. Cystoscopy was performed and demonstrated no abnormalities. At last, the Varicella-Zoster virus IgM and IgG ELISA was performed, anti-VZV IgM was negative and anti-VZV IgG was 773.1 IU/L (positive if ≥110 IU/L). Zoster sine herpete was diagnosed and Valacyclovir per os 1,000 mg 3 times daily for 7 days then 500 mg once daily for 3 months was prescribed. A week later, urinary symptoms successfully resolved. During the next 3 months, no recurrences were observed.

Discussion

Varicella-zoster virus causes chickenpox in childhood and remains dormant in dorsal root, enteric, and cranial ganglia for the rest of life. Different risk factors may contribute to the VZV reactivation, such as stress, fatigue, immunodeficient state, diabetes mellitus, and systemic diseases [3]. It is difficult to diagnose ZSH as it has no visible signs. Clinical features include unilateral dermatomal pain with different manifestations of nerve injury [3]. Voiding disorders are one of those manifestations. They can be clinically classified as cystitis-associated, neuritis-associated, and myelitis-associated [4]. Our patient suffered from cystitis-associated voiding disorders caused by VZV direct invasion into the bladder wall. Pain in the intergluteal cleft in our patient indicates S2–S3 dermatomes involvement.

Sterile urine culture, the absence of both bacteriuria and leukocyturia are characteristic features of viral infections of the lower urinary tract. PCR tests of urethral swab for HSV types 1 and 2, Epstein-Barr virus, and cytomegalovirus were done to exclude those agents as potential causes of voiding disorders.

Today, there is no single standard test for diagnosing ZSH. Because of the absence of any mucocutaneous lesions, punch biopsy, Tzanck smear, and viral isolation in cell culture cannot be utilized. PCR of saliva to detect VZV is seen as a promising test; however, its sensitivity and specificity haven't been tested yet. Additionally, VZV DNA can become negative by the time a VZV-specific response develops [5]. ELISA test was reported to have a sensitivity of 86–97% and a specificity of 82–99%; therefore, it can be used to diagnose ZSH [3,4]. This test has some special features that should be considered. On the one hand, anti-VZV IgM are produced early during reactivation and have a narrow time window for detection with a maximum of 10 weeks [5]. On the other

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hand, anti-VZV IgG can be falsely negative during early reactivation.

Detection of anti-VZV IgM or a 4-fold increase of anti-VZV IgG titers over the baseline are considered as reactivation or recent infection [4]. In our case, anti-VZV IgM was negative and anti-VZV IgG was 773.1 IU/L (baseline value is 110 IU/L).

VZV infection persisted for more than 1 month in our patient; thus, it can be considered chronic active. A standard treatment regimen followed by a 3-month suppressive therapy was effective in managing voiding disorders.

Conclusion

Zoster sine herpete may be the cause of voiding disorders in females with a history of unexplained pain within the distribution of the sacral dermatomes. Voiding disorders cannot be effectively managed without making the correct diagnosis.

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Ethical approval

This study was approved by the local ethics committee of the Russian Medical Academy of Continuous Professional Education on November 16, 2021 (protocol #15). The patient signed informed written consent before the study, giving permission to report any clinical information related to her case in a medical publication.

Author contributions

Study concept and design: Vagan Barsegian, Inga Kosova; Data acquisition: Inga Kosova; Data analysis: Vagan Barsegian; Drafting of manuscript: Vagan Barsegian; Critical revision of the manuscript: Inga Kosova.

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Disclosure statement

No potential conflict of interest was reported by the author(s).

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