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Case Report

A rare intruder in genital ulcer: A clinical dilemma

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ABSTRACT

Cytomegalovirus (CMV) is a leading cause of opportunistic infections in immunocompromised patients causing both systemic and cutaneous manifestations with significant morbidity and mortality. CMV infection is an important differential diagnosis of genital ulcer in immunosuppressed patients which needs prompt diagnosis and treatment as it could imply systemic involvement. Polymerase chain reaction is the diagnostic test of choice. Ganciclovir and valganciclovir are the preferred drugs administered according to the severity of disease.

Keywords: Genital ulcer, Cytomegalovirus, Immunosuppression, Ganciclovir

INTRODUCTION

Cytomegalovirus (CMV) infection is the leading infectious cause of congenital deafness, mental retardation, and blindness (TORCH syndrome).[1] It can cause both systemic and dermatological diseases in adults, especially in immunocompromised patients.[1] About 50–80% of immunocompetent individuals and up to 100% of HIV patients are infected with CMV.[2] In the immunocompetent, CMV might produce an infectious mononucleosis (IMN) like illness, whereas in the immunocompromised, it is a common opportunistic infection due to viral reactivation, leading to significant mortality and morbidity.[3] Cutaneous CMV infection is sporadic in literature[3] and might have prognostic implications if not detected promptly.[4]

CASE REPORT

A 34-year-old unmarried man, who underwent renal transplantation and on triple immunosuppressants for the preceding 4 months, presented with acute onset of hematemesis, diarrhea, and an 8-week history of recurrent multiple fluid-filled lesions on the penis which broke down within 2–3 days to form painful ulcers. The patient was admitted for the management of his medical condition, and dermatology opinion was sought for the evaluation of the genital ulcers.

On examination, there were multiple tender ulcers of sizes ranging from 1 × 1 to 3 × 2 cm on the shaft of penis with mild induration. Borders were well defined with the floor covered by granulation tissue and necrotic debris [Figures 1a and b]. The patient had no inguinal adenopathy, oral, ocular, skin, or mucosal lesions. He denied history of any sexual contact.

Tzanck smear for multinucleated giant cells and Gram staining for *Haemophilus ducreyi* were negative. Stains for fungal and bacterial organisms, including acid-fast bacilli, were also negative. The venereal disease research laboratory test (VDRL) test in dilution was non-reactive. Viral markers for hepatitis B, hepatitis C, and HIV were negative. X-ray chest and ultrasonography

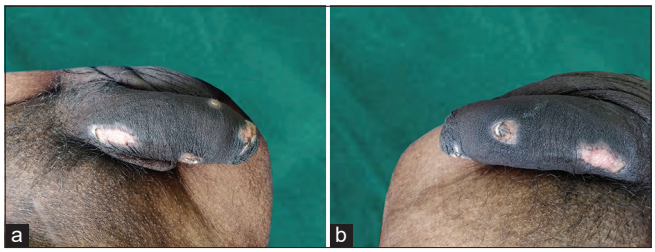

Figure 1: (a) Genital ulcer 1, (b) genital ulcer 2.

abdomen were unremarkable. Peripheral smear revealed severe pancytopenia and neutropenia. With history, physical findings and investigations, the possibility of a genital ulcer due to CMV also was considered. Polymerase chain reaction (PCR) detected CMV DNA from the ulcer. Hence, the diagnosis of a genital ulcer due to CMV infection was confirmed.

The patient was managed initially with intravenous Ganciclovir 125 mg OD (adjusted according to renal function) for 2 weeks. There was marked improvement and then the treatment was changed over to oral valganciclovir (450 mg in the morning and 900 mg in the evening) for 6 weeks. The ulcers healed completely.

DISCUSSION

CMV belongs to the herpes family of DNA viruses.[3] The *Herpesviridae* has a common structure with a capsid and lipid envelope flanking a double-stranded linear DNA.[3] The viruses depend on the host for DNA replication and transcription through RNA.[3]

The virus is transmitted through the body fluids (saliva, urine, blood, semen, vaginal secretions and breast milk) and also through transplanted organs and hematopoietic stem cells.[1] The incubation period is 4–8 weeks, which is followed by viremia.[1]

Although more than 90% of primary CMV infections are subclinical, reactivation can occur as IMN-like syndrome with lifelong latency in leukocytes, even in the immunocompetent host.[3] In the skin, CMV infects the blood vessel endothelium with biopsy showing non-specific inflammation and overlying ulceration. Infected cells show the characteristic large, eosinophilic "owl's eye" nuclear inclusions surrounded by a halo on hematoxylin-eosin staining.[5,6] The diagnostic test of choice is PCR.[7]

In the immunocompetent host, the IMN-like syndrome causes maculopapular/morbilliform eruptions, petechiae, purpura, ampicillin-induced eruption, urticaria and erythema nodosum.[1]

Immunosuppression can trigger reactivation of CMV.[1] The patient can present with fever, malaise, leukopenia, systemic involvement and uncommonly cutaneous manifestations.[8]

Systemic features include pneumonitis, colitis, hepatitis, retinitis and aseptic meningitis.[1,3]

The lesions may be specific and present as oral or perianal ulcerations, crusted papules, nodules, generalized morbilliform eruptions, verrucous plaques, perifollicular papulopustules, urticaria, vesiculobullous eruptions, petechiae, purpura and other vasculitic lesions.[1,9]

Reports of cutaneous CMV are infrequent, possibly because they are self-limiting, or due to its varied indistinct clinical presentations that are often misdiagnosed.[10]

Anogenital ulcerations are the most common cutaneous manifestation.[6,9] Although it is unclear why CMV preferentially infects anogenital skin, it is thought that viral reactivation in the gastrointestinal tract (GIT) causes perianal infection by fecal shedding.[6] Likewise, our patient might have been exposed to the viral shedding through the GIT even though he did not have perianal lesions. Oral ulcerations and ulcerations over the trunk, upper and lower extremities can also occur.[9] Skin involvement with CMV can predict an unfavorable prognosis and is associated with a mortality of 85% in 6 months in immunocompromised hosts.[4] Hence, surveillance and suspicion for CMV infections are important, especially when treatment directed against herpes simplex virus, which is the differential diagnosis, does not improve the skin lesions.

There are multiple drugs available for treating cutaneous CMV, including ganciclovir, foscarnet, cidofovir and valganciclovir.[11] For initial and recurrent episodes of CMV disease, valganciclovir (900 mg every 12 h) or intravenous ganciclovir (5 mg/kg every 12 h) is recommended as the first-line treatment in adults with normal kidney function.[12] Valganciclovir is recommended in patients with mild-to-moderate CMV disease who can tolerate and adhere to oral medication.[12] Intravenous ganciclovir is recommended in life-threatening and severe disease.[13] Since our patient presented with gastrointestinal manifestations along with the genital ulcers, IV ganciclovir was initiated. After the clinical response, intravenous ganciclovir was changed to oral valganciclovir.[12] Ganciclovir, a synthetic analog of 2′-deoxyguanosine, acts against human CMV through ganciclovir triphosphate-mediated inhibition of viral DNA synthesis in CMV-infected human cells.[13] Valganciclovir, an L-valyl ester of ganciclovir, is well absorbed after oral administration and rapidly hydrolyzed to ganciclovir in the intestinal wall and liver.[13] They are eliminated almost exclusively by renal excretion, thus indicating the need for dosage adjustment in patients with altered renal function.[13] In patients who are intolerant to both, foscarnet is the recommended second-line agent.[12] Secondary prophylaxis with valganciclovir is not routinely recommended.[12]

CONCLUSION

Cutaneous CMV infection should be considered in the differential diagnosis for genital ulcers in immunocompromised

patients. Cutaneous CMV disease may reflect systemic involvement, and its recognition has important implications for patient care. Due to the varying presentations of CMV infection in immunosuppressed individuals, high index of suspicion and prompt workup is vital for accurate diagnosis and treatment.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Downing C, Mendoza N, Sra K, Tyring SK. Human herpesviruses. In: Bolognia JL, Schaffer JV, Cerroni L, editors. Dermatology. 4th ed. New York: Elsevier; 2017. p. 1418-20.
2. James W, Elston D, Treat J, Rosenbach MA, Neuhaus IM. Viral diseases. In: Andrews' Diseases of the Skin. 13th ed., Ch. 19. China: Elsevier; 2019. p. 381-2.
3. Fasanya AA, Pedersen FT, Alhassan S, Adjapong O, Thirumala R. Cytomegalovirus cutaneous infection in an immunocompromised patient. Cureus 2016;8:e598.
4. Pinca R, Crawford RI, Au S. Cytomegalovirus scrotal ulcer in a renal transplant patient. J Cutan Med Surg 2016;20:567-9.
5. Lesher JL Jr. Cytomegalovirus infections and the skin. J Am Acad Dermatol 1988;18:1333-8.
6. Choi YL, Kim JA, Jang KT, Kim DS, Kim WS, Lee JH, *et al*. Characteristics of cutaneous cytomegalovirus infection in non-acquired immune deficiency syndrome, immunocompromised patients. Br J Dermatol 2006;155:977-82.
7. Razonable RR, Humar A, AST Infectious Diseases Community of Practice. Cytomegalovirus in solid organ transplantation. Am J Transplant 2013;13 Suppl 4:93-106.
8. Kaisar MO, Kirwan RM, Strutton GM, Hawley CM, Mudge DW, Campbell SB, *et al*. Cutaneous manifestations of cytomegalovirus disease in renal transplant recipients: A case series. Transpl Infect Dis 2008;10:209-13.
9. Drozd B, Andriescu E, Suárez A, De la Garza Bravo MM. Cutaneous cytomegalovirus manifestations, diagnosis, and treatment: A review. Dermatol Online J 2019;25:13030/qt84f936cp.
10. Kwan CK, Tang TM, Lam WY, Chan Y. Cutaneous cytomegalovirus manifestation in a HIV-negative patient. Hong Kong J Dermatol Venereol 2009;17:97-102.
11. Srisuttiyakorn C, Varapornpipat P, Aunhachoke K. Atypical cutaneous cytomegalovirus (CMV) infections in non AIDS patients; a report of 2 cases. Clin Res Dermatol Open Access 2017;4:1-4.
12. Kotton CN, Kumar D, Caliendo AM, Huprikar S, Chou S, Danziger-Isakov L, *et al*. The third international consensus guidelines on the management of cytomegalovirus in solid-organ transplantation. Transplantation 2018;102:900-31.
13. Cvetković RS, Wellington K. Valganciclovir: A review of its use in the management of CMV infection and disease in immunocompromised patients. Drugs 2005;65:859-78.

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