Cutaneous Ulcers In A Renal Transplant Recipient

Shabnam Tehrani M.D.
Associate Professor of Infectious Diseases
Shahid Beheshti University of Medical Sciences
Clinical HIV/AIDS Fellowship

Case presentation

- A 54-year-old woman
- 2 month post-renal transplant (for ESRD secondary to polycystic kidney disease)
- deceased donor
- induction therapy with a single dose of ATG

Drug History

- Cellcept
- Tacrolimus
- Prednisolon

- Valcyte
- TMP/SMX

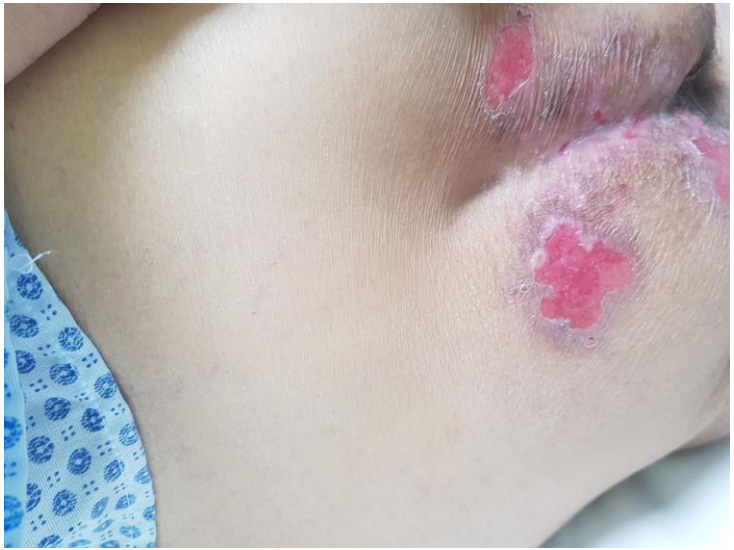
Screen before transplant

- IGRA= neg
- PPD= 3 mm
- CMV (D + / R+)
- HSV 1,2= pos
- VZV =(D+/ R -)

- EBV (D+/ R -)
- HBS Ag= neg / HBS Ab= pos / HBC Ab= neg
- HCV Ab= neg

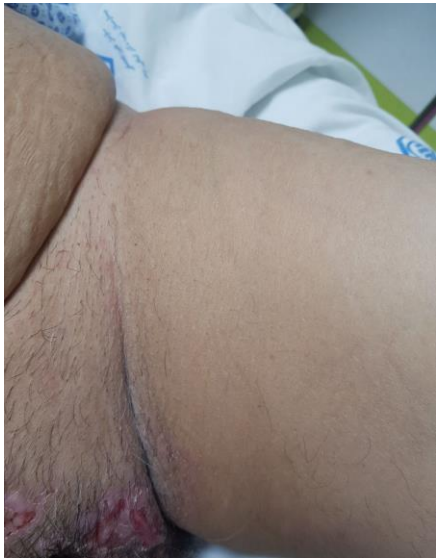
Case presentation

- several-day history of Burning and pain in the genital area
- painful ulceration of the of her gluteus & genitalia
- No fever



PH/EX

- conscious
- Apyretic
- Stable Vital sign
- clean-based ulcers in Gluteus & genitalia ulcer
- no other significant findings
- No LAP



Lab data

- **CBC: WBC: 3300** (PMN= 74% , lymph= 14%, basophils 2%, eosinophils 2% monocytes 8%,)

  HGB=12.1 g/dL

  PLT=198 000

- **serum creatinine :1.3**

- **ESR: 22**
- **CRP:18**
- **UA: NL**
- **AST:98 / ALT:103 / Bili: NL**
- **Serum CMV PCR :????**

Differential diagnosis for the patient ????

treatment plan ???

Patient process

- A presumptive diagnosis of HSV infection was made
- Acyclovir was started
- But after several days, there was no improvement in the ulcers

- Dermatologist consultation was requested and ulcer biopsy was performed
- One sample was submitted to histopathology and the other to (PCR) for CMV, HSV, VZV.

Patient process

- Two days later: reduced visual acuity of the left eye
- **Visual acuity 10/10 in the right eye and 5/10 in the left eye**
- **Funduscopic examination revealed : active retinitis lesions with coalescing white exudates in a vascular pattern in the midperipheral areas of the left eye.**
- **There were intraretinal hemorrhages.**

What changes do you make in the patient's treatment plan now?

Patient process

- At that time we were unable to perform a quantitative nucleic acid amplification testing using ocular fluids.
- The antiviral therapy was changed to IV ganciclovir
- intravitreal injection ganciclovir

Patient process

- Serum CMV PCR= 25100 copies/mL
- Pathology=Within the dermis was a diffuse, mixed inflammatory infiltrate with scattered vascular endothelial cells showing intranuclear inclusions, confirmed consistent with CMV on immunohistochemical staining
- PCR on Biopsy sample : pos for CMV / HSV (-) / VZV (-)

Patient process

- **Intravenous ganciclovir therapy was administered (dose was 5 mg/kg BD) for 3 weeks, and MMF was stopped.**
- **Fundoscopic examination showed the impeovement of Retinitis within 1 week**
- **The patient's ulcers improved**
- **Serum CMV PCR decreased, and WBC increased with a complete recovery of the lesions within 3 months**.

Patient process

- After discontinuation of intravenous ganciclovir, the patient was treated with oral valganciclovir therapy, 900 mg daily for another 3 months.

Can skin be the first site of CMV involvement preceding a systematic infection in a renal transplant recipient?

Discussion

- Skin disease remains a rare manifestation of reactivated CMV disease in any setting.
- It usually presents as generalized maculopapular eruptions, but ulcers, nodules, vesicles, petechiae and plaques may also be seen and can mimic other skin eruptions and cutaneous viral infections, especially herpetic infections.
- **Ulceration, particularly involving the genital, perineum and perianal areas**, as well as necrosis of the mucosal membranes can occur in more severe cases.

Risk factors affecting the incidence of CMV disease

- **donor and recipient serostatus** (CMV-seronegative recipients of CMV seropositive donors [D+/R-] are at the highest risk),
- **Type and dosage of immunosuppressive drugs (induction, lymphocyte-depleting antibodies such as alemtuzumab and anti-thymocyte globulin (ATG)**

- **donor age** (over 60 years old),
- **Simultaneous kidney-pancreas transplantation**
- **presence of acute rejection episodes**
- **chronic graft malfunction**

Discussion

- There are two possible explanations for such CMV skin ulcers:
- the virus resides in the gastrointestinal tract in a latent stage and then it infects the perineum skin via fecal shedding when it is reactivated
- or there is a reactivation of a local latent virus in endothelial cells during endothelial colonization on the path to haematogenous dissemination

Discussion

- The presence of a CMV skin ulcer can represent the first sign of systemic CMV infection.
- Cutaneous involvement by cytomegalovirus in a renal transplant recipient as an indicator of severe systemic infection.
- As a rule, one should aggressively investigate any new and/or unusual skin lesion with a biopsy in IC patients.

Discussion

- Before highly active antiretroviral therapy (HAART) was available, CMV retinitis occurred in 20 to 40% of **HIV patients**, being the most frequent ocular opportunistic infection in this population .

- In contrast, CMV retinitis incidence in other immunosuppressive states is much lower, **affecting 1 to 2% of kidney transplant recipients**.

- **CMV retinitis diagnosis is based on clinical and ophthalmologic examination**.. A positive QNAT in aqueous or vitreous ocular fluid can confirm the diagnosis and may be helpful in cases with atypical clinical presentations

Discussion

- The onset of CMV retinitis may be insidious or rapid.
- Patients complain of painless, progressive visual loss, blurring, and floaters. CMV retinitis usually arises unilaterally, although it may subsequently progress to the contralateral retina.
- Funduscopic examination of the involved eye typically reveals **coalescing white exudates in a vascular pattern, with surrounding hemorrhage and edema**.

Discussion

- The duration of treatment is not established but some studies suggest that it can be stopped with security when there are no signs of CMV activity on ophthalmologic evaluation.

- CMV retinitis is a serious ocular complication in immunosuppressed individuals and can lead to irreversible blindness. Early diagnosis and treatment remains crucial in obtaining the best visual prognosis in affected patients.

Any questions?