



Scabies-induced thrombocytopenia in a renal transplant recipient

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Pruritus is a widespread problem following a kidney transplantation patient, being related to several etiologic or contributing factors such as medications related to transplantation. We present classical scabies in a 50-year-old male with history of kidney transplantation. After assessing other reasons of pruritus such as history of kidney disease and received medications, scabies was diagnosed as the cause. The skin lesions improved within 14 days after starting treatment with complete resolution of symptoms using oral ivermectin and topical permethrin. It should be taken in to consideration that common causes of pruritus unrelated to transplantation are in need of more attention. Our case shows the importance of diagnosing scabies in renal transplant patients and successful scabicial treatment.

Keywords: Pruritus, kidney transplantation, Skin , Lesions

INTRODUCTION

Pruritus is a widespread problem following a kidney transplantation in at least 40% of patients with end-stage renal disease, being related to several etiologic or contributing factors, e.g., hyperparathyroidism, elevated systemic inflammation, inadequate dialysis and sweat gland atrophy; however, the pathogenesis of uremic pruritus remains considerably unclear (Combs et al. 2015; Patel et al. 2007).

Although intractable pruritus worsening at night is described to be hallmark of classical scabies, many skin infections may be occurred in post renal transplant setting (Sampath kumar et al. 2010).

Scabies has been defined as the skin lesions caused by female mite of *Sarcoptes scabiei* variety *hominis* and their eggs, and scybala deposition in the epidermis, resulting in delayed-type hypersensitivity reaction (Hengge et al. 2006).

There is little published evidence of scabies and chronic kidney disease (Sampath kumar et al. 2001; Tseng et al. 2011; Wang et al. 2019), but may also be underdiagnosed or underreported in transplant recipients due to its rarity (Tollit et al. 2013; Wang et al. 2019). Crusted or Norwegian scabies is a disease variant linked to T-cell dysregulation in immunocompromised hosts, e.g., renal transplant recipients. Transplant patients are at risk for scabies due to the use of immunosuppressive drugs. We report a case of pruritus due to scabies as complication in 50-year-old male with a history of kidney transplantation.

Case presentation

A 50-year-old male known case of kidney transplantation was admitted to the hematology department with skin lesions and thrombocytopenia (platelet count below 10,000). The patient had skin lesions from 3 weeks before admission that were accompanied by pain, burning and itching.

Primary lesions have formed at the site of the operation, which have spread over time. At the time of admission, he had neither above-mentioned lesions nor oral mucosal lesions. Prior medical history included hypertension, hyperlipidemia, chronic kidney disease (CKD), severe renal failure and kidney transplantation after 8 months of dialysis. He had also a history of receiving Tacrolimus and Mayfortic. The patient underwent a biopsy due to skin lesions.

Regarding severe platelet decline, TTP, DIC, ITP and other causes have been investigated for pharmacological causes. A bone marrow biopsy was performed for the patient, showing rejection of all the above causes.

The patient's general condition deteriorated during hospitalization and he developed impaired consciousness and fecal and urinary incontinence. Simultaneously, the patient suffered severe skin lesions and itching. Later, he was diagnosed with classical scabies. The patient was treated with anti scabies drugs. With the start of anti-scabies treatment, the general condition of the patient improved during the first 24 hours and the platelets increased from 10,000 to 38,000 in the first 24 hours, to 60,000 in 48 hours and to 150,000 in the third day. His

symptoms resolved one week after treatment. The skin lesions improved within 14 days after starting treatment and the patient was discharged. He returned to the clinic, where he recovered completely and his platelets were normal

DISCUSSION

There are an estimated 300 million cases of scabies worldwide annually. The prevalence of scabies varies over time, but remains under diagnose in many poor communities. Although microscopic visualization of a mite is a definite diagnosis of scabies, but empiric treatment based on clinical suspicion is very common. Scabies shows a variable skin rash, which makes it difficult to distinguish from many other skin conditions. Furthermore, clinical care is limited in many endemic areas. Hence, an accurate global epidemiology of disease is not available (Currie and Hengge, 2017).

Few studies described association of scabies and chronic kidney disease (Sampathkumar et al. 2001; Tseng et al. 2011; Wang et al. 2019), but may also be underdiagnosed or underreported in transplant recipients due to its rarity (Tollit et al. 2013; Wang et al. 2019). Herein, we present a patient with crusted scabies in a kidney transplant recipient treated successfully for lesions.

Five months after transplantation, the patient experienced generalized pruritus with pain, burning and itching. Regarding severe platelet decline, TTP, DIC, ITP and other causes have been investigated for pharmacological causes. The patient's general condition deteriorated during hospitalization and he developed impaired consciousness and fecal and urinary incontinence. After treatment, the patient skin lesions were completely resolved.

Pruritus is found to be the most common clinical characteristics of scabies. Host type I and IV hypersensitivity reactions have been defined to be associated with the path physiology of skin rash and pruritus (Yates et al. 2013). Delayed type-IV hypersensitivity reaction against mite and its antigens has been described to be associated with signs and symptoms of scabies (Hengge et al. 2006). An intact cell-mediated response is linked to control of classical scabies, but not clearance of mites. It has been described that effective T cells are primarily involved in acute allograft rejection, triggering an inflammatory response in the infiltrated graft. Immunosuppressive drugs in renal transplant patient are capable of disrupting T-cell activity through depleting lymphocytes, diverting lymphocyte traffic, and inhibiting lymphocyte pathways, predisposing the population to development of crusted scabies (Halloran et al. 2004; Wang et al. 2019). Immunosuppressive drugs are considered to be the most common leading cause of generalized pruritus. Of note, early diagnosis of scabies is of great importance. Scabies should be suspected in renal transplant recipient who present with pruritus and skin lesions, resulting in early diagnosis and treatment.

It is difficult to believe that scabies alone is life-threatening, but severe pruritus and possible loss of allograft function can lead to reduced life expectancy (Yates et al. 2013).

This case presents classical scabies in a male patient with renal transplantation history whereby the diagnostic process was completed after assessing other reasons of pruritus such as history of kidney disease and received medications. Our case shows the importance of diagnosing scabies in renal transplant patients and its successful scabid treatment.

CONCLUSION

It should be taken into consideration that common causes of pruritus unrelated to transplantation are in need of more attention. Our case shows the importance of diagnosing scabies in renal transplant patients and successful scabid treatment.

CONFLICT OF INTEREST

The authors declared that present study was performed in absence of any conflict of interest.

AUTHOR CONTRIBUTIONS

All authors, contributed equally, read and approved the final version.

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