



# Cutaneous Aspergillosis As a First Manifestation of Systemic Infection in Patient After Kidney Transplantation

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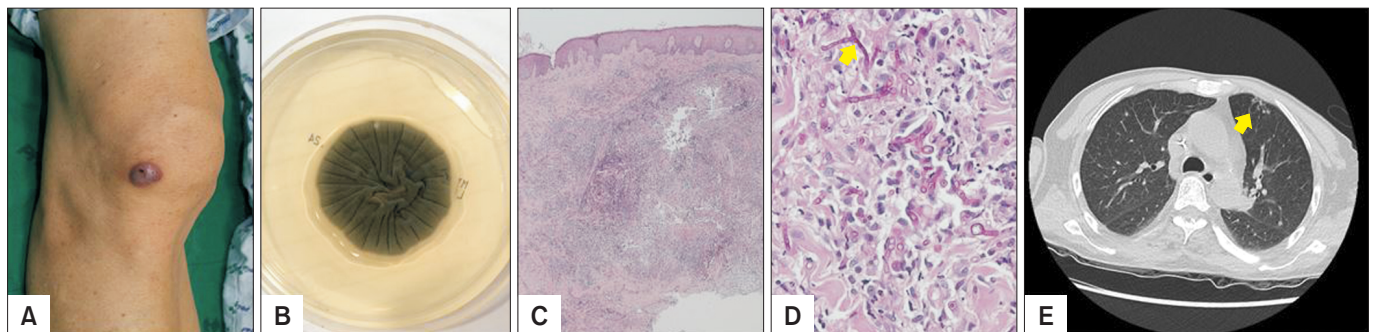
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Dear Editor:

Aspergillosis is a significant cause of morbidity and mortality after organ transplantation. Cutaneous aspergillosis reportedly develops primary or secondary to hematogenous dissemination. Secondary *Aspergillus* infection resulting from hematogenous spread is extremely rare (<5%)<sup>1</sup>. Moreover, there are no reports of cutaneous lesions as the first sign of systemic aspergillosis. Herein, we present the case of a patient with cutaneous

manifestations as the first sign of systemic aspergillosis.

A 70-year-old Korean male visited the dermatologic department for evaluation of a purple-colored nodular cutaneous lesion on the knee that appeared 2 months after renal transplantation. Histopathological analysis showed massive dermal neutrophilic and granulomatous inflammation. Moreover, multiple fungal hyphae were observed following periodic acid-Schiff with diastase (D-PAS) staining, and the patient



**Fig. 1.** (A) Purple-colored nodule on the right knee. (B) Spreading yellow-green colony. (C) Skin biopsy revealed dermal neutrophilic and granulomatous infiltration (H&E, original magnification  $\times 20$ ). (D) Numerous septate hyphae with dichotomous branching are visible at 45° angle (D-PAS staining, original magnification  $\times 200$ ; yellow arrow). (E) Fungal balls were observed on chest computed tomography (yellow arrow).

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was diagnosed with cutaneous fungal infection (Fig. 1). Unexpectedly, before his scheduled visit with the dermatologist, the patient visited the emergency department with left-sided weakness and dysarthria. Magnetic resonance imaging of the brain revealed an abscess suspected to have a fungal origin. The patient was diagnosed with systemic aspergillosis based on the presence of a fungal ball observed on chest computed tomography and a positive result in the broncho-alveolar lavage fluid galactomannan test. Although the patient received systemic antifungal therapy, such as amphotericin B, and voriconazole, he died of systemic mycoses 6 weeks after diagnosis.

Cutaneous, subcutaneous, and systemic fungal infections are responsible for significant morbidity and mortality, particularly in immunocompromised patients<sup>2</sup>. *Aspergillus* sp. infection occurs in 1%~15% of organ transplant patients and has a mortality rate of 74%~92%<sup>3</sup>. Risk factors for dissemination after initial infection include long-term use of immunosuppressants and transplant organ dysfunction. In this case, the patient took high doses of immunosuppressants—prednisolone, cyclosporin, and azathioprine—before and after kidney transplantation; the use of immunosuppressants is considered a major predisposing factor for the spread of *Aspergillus* into the skin<sup>4,5</sup>.

Early diagnosis can greatly reduce mortality due to systemic aspergillosis by provision of prompt treatment; however, the condition is diagnosed after considerable disease progression in most patients. This makes treatment difficult and worsens the clinical course, leading to death, as in the present case.

The authors report a case of cutaneous aspergillosis in the form of a cutaneous nodule in a patient using immunosuppressive agents after kidney transplantation. Such cutaneous lesions in immunosuppressed patients may be an early symptom of opportunistic infection. We received the patient's consent form about publishing all photographic materials.

## CONFLICTS OF INTEREST

The authors have nothing to disclose.

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