CORRESPONDENCE

Toxoplasmosis presenting with a subtle maculopapular eruption in a child post hematopoietic stem cell transplantation

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Toxoplasmosis, caused by the protozoan Toxoplasma gondii, is a life-threatening complication after hematopoietic stem cell transplantation (HSCT). Cutaneous toxoplasmosis (CT) is very rare, mainly affecting severely immunocompromised patients. We report a case presenting with subtle maculopapular lesions as the first manifestation of toxoplasmosis.

A 15-year-old boy with a 4-year history of myelodysplastic syndrome was admitted for allogenic peripheral blood stem cell transplantation due to refractory pancytopenia. After transplantation, he developed Grade IV graft versus host disease (GVHD), which improved after immunosuppressive therapy. However, scattered erythematous maculopapules were noticed on the trunk and extremities (Figures 1A and 1B) on Day 66, followed by spiking fever 2 days later. Antibiotics, including voriconazole, were initiated. A skin biopsy was performed (Figure 1A) on Day 73, which revealed intracytoplasmic cysts packed with numerous bradyzoite-like tiny organisms (2–3 μm) in a few epidermal keratinocytes (Figure 1C), findings that were consistent with CT.

The patient developed lethargy, conscious disturbance, and visual hallucination on Day 80. Brain magnetic resonance imaging revealed numerous parenchyma nodules, suggestive of an infection. The diagnosis of toxoplasmosis was supported by positive results of polymerase chain reaction (PCR) in the cerebrospinal fluid and bone marrow aspiration. Oral pyrimethamine 2 mg/kg/d and intravenous clindamycin 600 mg q6h were initiated on Day 87. The patient regained consciousness a few days later. However, he developed pneumonia. Acid-fast bacilli were demonstrated in the sputum, and Mycobacterium hemophilum, Epstein–Bar virus, and T. gondii were detected by PCR in the bronchoalveolar lavage specimen. He died of multiple organ failure on Day 112.

CT is very rare; only 12 cases have been reported in the past 3 decades, including five cases with HSCT, three with human immunodeficiency virus infection, and two immunocompetent patients. Our patient represents the second case in which CT was the first manifestation of toxoplasmosis. The first reported case of CT also was a young child after HSCT. Cutaneous manifestations of CT were usually subtle, mostly showing erythematous or purpuric maculopapular lesions in which drug eruption, cutaneous GVHD, or viral infection was considered clinically important in most cases. Eight patients (5 with HSCT) were...
treated with pyrimethamine combined with sulfadiazine or clindamycin, and three recovered (1 with HSCT). The overall outcomes of these patients were poor; eight patients (62%) were in fatal condition, including five of the six HSCT recipients.

The histopathology of CT was subtle, usually with little inflammation, mimicking drug eruption and cutaneous GVHD. Intracellular zoites were found in 10 cases, mostly with bradyzoites in cysts in the epidermis. Occasionally, tachyzoites were observed in keratinocytes or in the dermis, either in histiocytes or extracellularly. These zoites need to be distinguished morphologically from other tiny organisms, including Histoplasmosis capsulatum, Leishmania, and Trypanosoma, and can be confirmed immuno-histochemically using antitoxoplasma antibody in paraffin sections (positive in 65%), and PCR study (positive in 75%).

Diagnosis of CT is challenging because the skin lesions are usually subtle and are easily overlooked or confused with other more common post-HSCT eruptions. The recognition of these tiny intracellular protozoa requires a high index of suspicion. It is important to include CT in the differential diagnosis of post-HSCT skin eruptions.

References