## Nonfatal *Strongyloides Stercoralis* Hyperinfection Secondary to Pemphigus Vulgaris Immunosuppressant Treatment: Case Report and Brief Literature Review

## Hiper-infeção Não-Fatal por *Strongyloides Stercoralis* Secundária a Tratamento Imunossupressor para Pênfigo Vulgar: Relato de Caso e Breve Revisão da Literatura

**Keywords:** Immunosuppressive Agents/adverse effects; Pemphigus/drug therapy; Strongyloides stercoralis; Strongyloidiasis/chemically induced; Strongyloidiasis/diagnosis; Strongyloidiasis/drug therapy; Superinfection
**Palavras-chave:** Estrongiloidíase/diagnóstico; Estrongiloidíase/induzida quimicamente; Estrongiloidíase/tratamento farmacológico; Imunossupressores/efeitos adversos; Pênfigo/tratamento farmacológico; Strongyloides stercoralis; Superinfecção

A 36-year-old Afro-Brazilian man presented with widespread flat cutaneous blisters and erosions as well as oral and genital erosions for four months. His medical history was unremarkable. A skin biopsy revealed an intraepidermal blister, direct immunofluorescence showed intercellular IgG and complement deposits, and a Tzanck smear demonstrated round epithelial cells suggestive of acantholytic pemphigus cells, confirming the diagnosis of pemphigus vulgaris. Intermittent eosinophilia was noted. The patient was started on prednisolone 1 mg/kg, followed by mofetil mycophenolate (1500 mg/day) as a steroid-sparing agent. However, his condition worsened, requiring intravenous immunoglobulin cycles (2 mg/kg divided into four doses), which proved ineffective. The patient was then treated with rituximab. Following the second infusion, an intense flare of pemphigus blisters occurred. Salvage therapy with intravenous methylprednisolone pulses led to initial improvement, but intense recurrence of blisters and mucosal erosions occurred three weeks later. Another methylprednisolone cycle was administered and, after its end, the patient developed intestinal obstruction, with abdominal distention, nausea, vomiting, fever, tachycardia, hypotension, and an altered mental status. Upper endoscopy revealed mucosal erosions in the esophagus, stomach, and duodenum. The mucosal biopsies revealed numerous *Strongyloides stercoralis* forms (Fig. 1). Successive blood cultures isolated *Escherichia coli*, *Enterococcus faecium* and *Pseudomonas aeruginosa.* These findings led to the diagnosis of *S. stercoralis* hyperinfection with secondary sepsis. The patient was treated with albendazole (400 mg twice a day for seven days), ivermectin (200 µg/kg) and intravenous broad-spectrum antibiotics. Despite the high mortality rate associated with *S. stercoralis* hyperinfection, the patient survived without active pemphigus lesions but with severe wasting.

*Strongyloides stercoralis* is an intestinal nematode predominantly acquired in tropical and subtropical regions, with an estimated global prevalence of 100 million individuals. The diagnosis of *Strongyloides* infection can be established through serial stool examinations or with serologic tests.[1] Chronic infection is frequently asymptomatic in immunocompetent individuals, although up to 75% of patients have peripheral eosinophilia or elevated total IgE levels.[1] Hyperinfection syndrome implies the presence of signs and symptoms attributable to increased larval migration. If untreated, the mortality rate is high (75%).[2] Ivermectin is the drug of

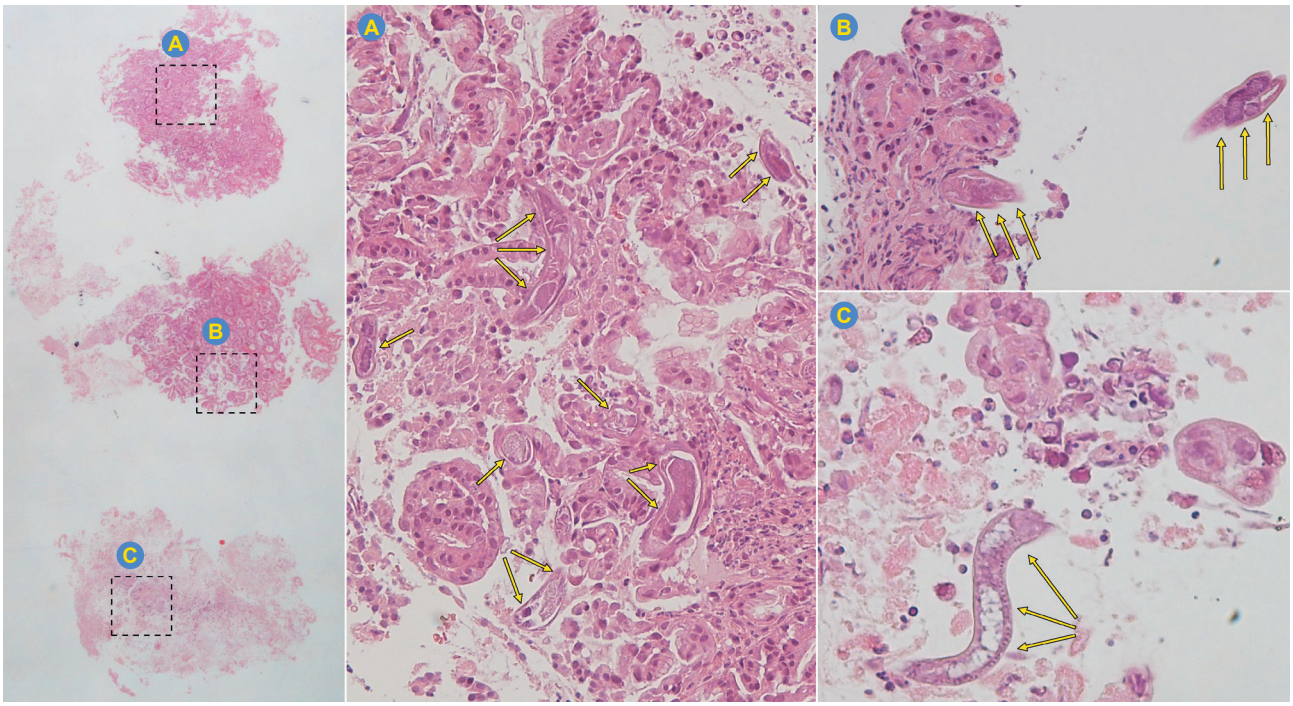


Figure 1 – Fibrin, granulocytic exudate and two fragments of pyloric gastric mucosa with marked activity; in (A) and (B) are identified numerous parasite ova, larvae and adult worms (arrows) surrounding the foveolar and glandular epithelium, with intense granulocytic and histiocytic infiltration; in (C) is observed, in more detail, the structure of the Strongyloides stercoralis (arrows).

choice for hyperinfection syndrome.[1] This case reminds us that immigrants from endemic areas may have chronic asymptomatic intestinal colonization with *S. stercoralis*, which may progress to hyperinfection and dissemination under immunosuppression therapy.[3] Patients with conditions that require long-term immunosuppressive treatment or chemotherapy are at increased risk of this serious complication.[4,5] Examination of a stool sample from all patients, particularly from endemic areas, on long-term immunosuppressive therapy should be mandatory to prevent the occurrence of *S. stercoralis* hyperinfection and avoid morbidity and mortality associated with it.[1,5] Given the low sensitivity of parasitological examination of stool samples, therapy with ivermectin should always be considered in individuals from endemic areas.

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## AUTHOR CONTRIBUTIONS

ITA: Study design, data collection, writing of the manuscript.

PV: Study design, data collection, critical review of the manuscript.

MDR, PF: Critical review of the manuscript.

LSA: Data collection, critical review of the manuscript.

All authors approved the final version to be published.

## PROTECTION OF HUMANS AND ANIMALS

The authors declare that the procedures were followed according to the regulations established by the Clinical Research and Ethics Committee and to the Helsinki Declaration of the World Medical Association updated in October 2024.

## DATA CONFIDENTIALITY

The authors declare having followed the protocols in use at their working center regarding patients' data publication.

## PATIENT CONSENT

Obtained.

## COMPETING INTERESTS

The authors have declared that no competing interests exist.

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