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## Three Autochthonous Cases of Strongyloidiasis: An Endemic Tropical Disease Underdiagnosed in Portugal

### Três Casos Autóctones de Estrongiloidíase: Uma Doença Tropical Subdiagnosticada Em Portugal

**Keywords:** Portugal; *Strongyloides stercoralis*; Strongyloidiasis  
**Palavras-chave:** Estrongiloidíase; Portugal; *Strongyloides stercoralis*

*Strongyloides stercoralis* is a nematode with worldwide distribution, and a frequent cause of infection in tropical and subtropical regions.<sup>1-5</sup> Although sporadic imported and autochthonous cases have been described in Southern Europe,<sup>3-5</sup> there is no recent epidemiological data from Portugal.

Infection is more common in areas with poor sanitary conditions as it frequently occurs after skin exposure to contaminated soil with larvae. In Portugal, several autochthonous cases were described until 1985, suggesting endemic foci, mainly in the district of Coimbra.<sup>1,2</sup> After 1986 (when Portugal joined what was then known as the European Economic Community), sanitary conditions improved and the infection became underdiagnosed.<sup>2</sup>

The parasite can complete its lifecycle within the human host with persistent autoinfection. If not correctly eradicated, the parasitosis may persist for decades, with periods of remission and recurrence of symptoms – mainly gastrointestinal, respiratory, or cutaneous. Peripheral intermittent eosinophilia is common, but its absence does not exclude the diagnosis.<sup>1</sup>

In immunocompromised individuals (particularly those with impaired cellular immunity),<sup>3</sup> hyperinfection syndrome may occur: an accelerated autoinfection cycle with disseminated strongyloidiasis, associated with a high morbimortality. Therefore, eradication is particularly important in immunosuppressed or immunosuppression candidates.<sup>1,3</sup>

In 2020, Pinto *et al*<sup>1</sup> presented one of the first autochthonous cases of strongyloidiasis in Portugal since 1985<sup>5</sup>: the case of a 69-year-old farmer with abdominal pain and eosinophilia.

We present three cases of strongyloidiasis diagnosed at our institution between 2017 and 2018. These individuals were born between 1935 and 1958 in Matosinhos, Vila do Conde and Amarante, with no travel to endemic areas reported before diagnosis.

One patient was completely asymptomatic, but parasite eradication was performed as the patient was a candidate for immunosuppressive therapy. In the other two situations, symptoms or signs compatible with chronic infection were described: diarrhea after the initiation of rituximab and high-dose corticosteroids, and marked eosinophilia (49%, 5800 eosinophils/ $\mu$ L). In the latter, eosinophilia improved dramatically after treatment.

In all cases, parasitological stool examinations were negative, and the diagnosis was confirmed by immunoenzymatic assays.

The authors wish to draw attention to the existence of chronic carriers of *S. stercoralis*, who may have contracted the infection decades earlier. This parasitic infection is presumably forgotten and underdiagnosed due to the low clinical suspicion in patients without a history of travel to endemic regions. The consequences of hyperinfection syndrome after immunosuppression are dismal, and a high degree of suspicion is needed, particularly in patients with previous or current precarious sanitary conditions.

#### AUTHOR CONTRIBUTIONS

SRO: Data collection and writing of the manuscript.

CB, SMS: Data collection.

IN, SJ: Critical review of the manuscript.

#### 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 2013.

#### DATA CONFIDENTIALITY

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

#### PATIENT CONSENT

Obtained.

#### COMPETING INTERESTS

SRO has received support for attending the National Congress of Infectious Diseases, the congress 'Infection and Sepsis' and a course on osteoarticular infections from

ViiV Healthcare, MSD, and Pfizer, respectively.

All other authors have declared that no competing interests exist.

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