

## Introduction

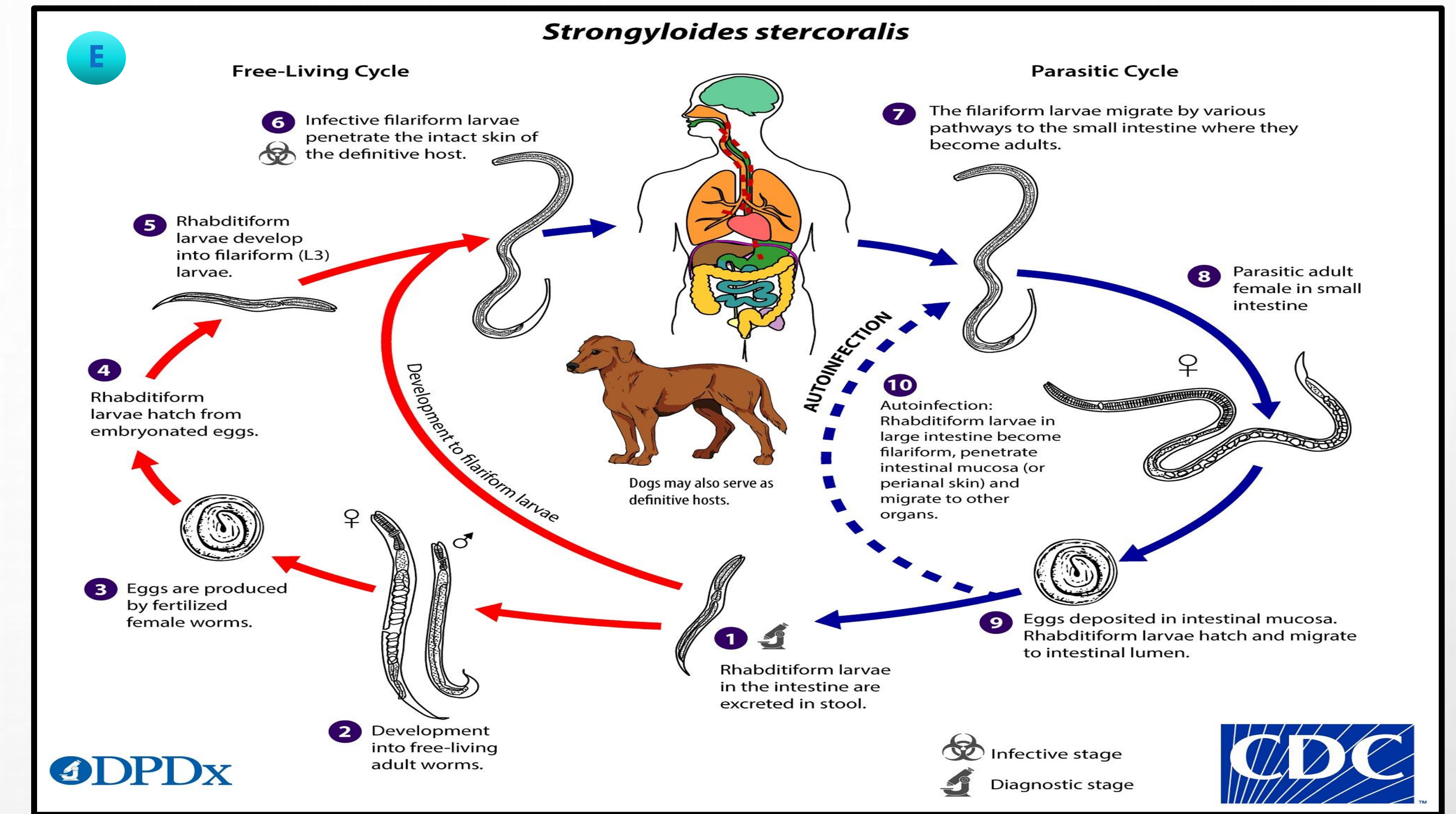
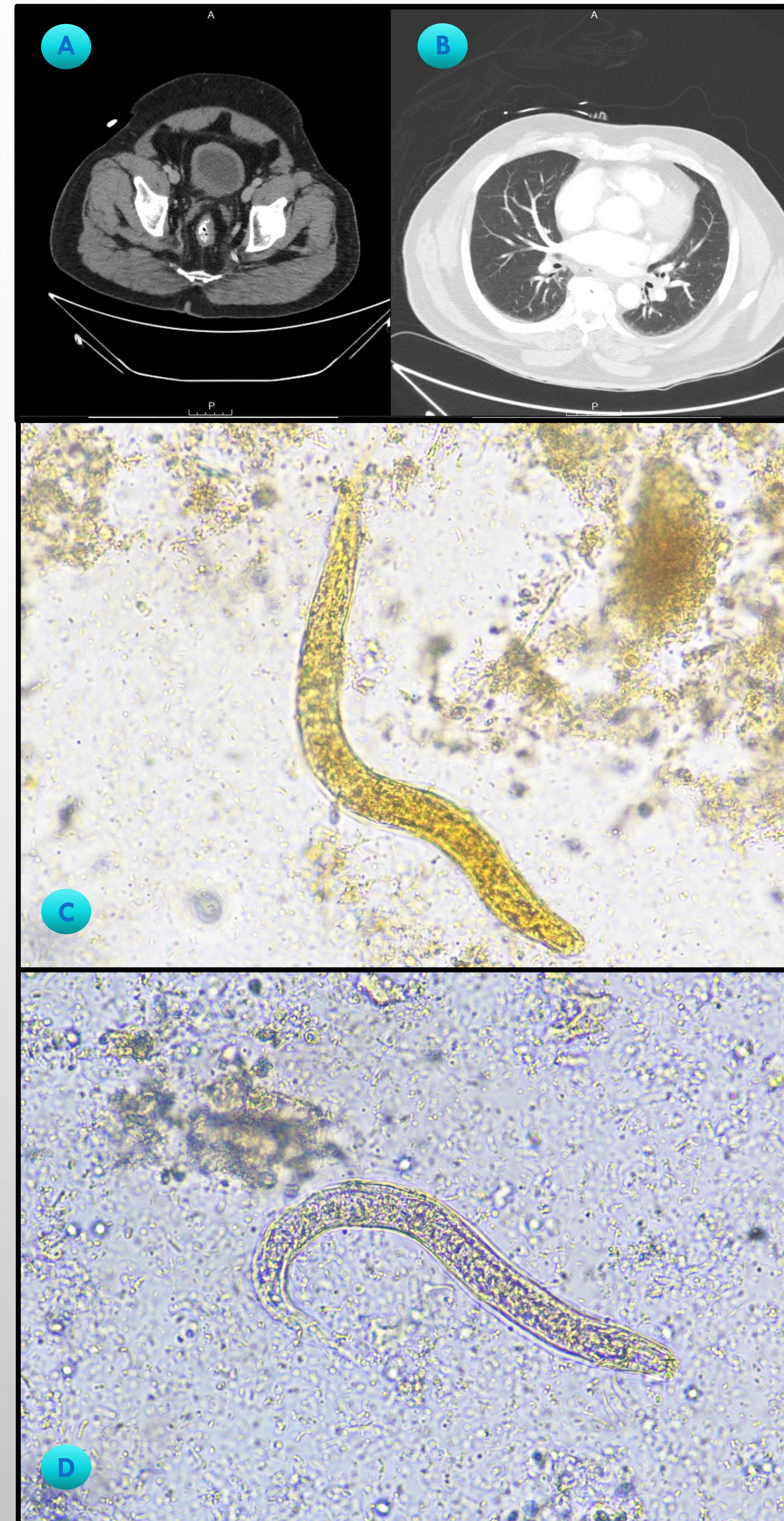
Strongyloidiasis is an umbrella term attributed to the various pathologies caused by the nematode helminth *Strongyloides stercoralis*. The condition is prevalent in around 70 countries with endemicity in tropical and subtropical climates, including the Southern United States.<sup>1</sup> In chronically infected and immunocompetent individuals, the disease is generally asymptomatic with eosinophilia and stool larvae being the only indication of infection.<sup>2</sup> More disseminated disease can lead to a debilitating condition known as *Strongyloides* hyperinfection syndrome (SHS). SHS is caused by a high intestinal parasitic load leading to multi-organ damage, particularly in the pulmonary circulation where parasitic perforation of alveolar membranes leads to severe respiratory distress.<sup>3</sup> The hallmark of this condition is severe multi-organ failure prompting admission to the ICU with mortality >60%. This condition typically occurs in the immunocompromised with underlying conditions such as hematologic neoplasias, advanced HIV infection, and organ transplantation.<sup>4</sup> However, there have been a rare handful of cases where immunocompetent patients have been affected.

## Case Presentation

A 73-year-old South Asian male with well-controlled asthma and diabetes presented with worsening shortness of breath, cramping abdominal pain, and distension for the past month accompanied by a productive cough and constipation with no bowel movement for the last 4 days. Twenty years earlier, he had emigrated from Bangladesh to his current home in Western New York.

He had wheezing and diffuse, mild abdominal tenderness. Workup showed a leukocytosis with eosinophilia (26%, w/ 33% on manual diff). CT found minimal atelectasis in the lung bases with scarring in the lingula and scattered sub-centimeter calcified granulomas as well as a short segment of mural thickening in the sigmoid colon/rectum, concerning for infectious or inflammatory etiology [Figures A and B]. Initial treatment with nebulizers/steroids and bowel regimens failed to relieve his symptoms.

The following day, the patient developed abdominal and perianal itching. Stool analysis showed *Strongyloides stercoralis* larvae [Figures C and D]. Steroids were discontinued and a course of oral ivermectin was begun. The pain and itching resolved thenceforth, with a transient worsening of the cough. The patient was discharged on day 6 after having had multiple bowel movements with improvement in his breathing and abdominal pain. Absolute eosinophil count had decreased to 4.5%.

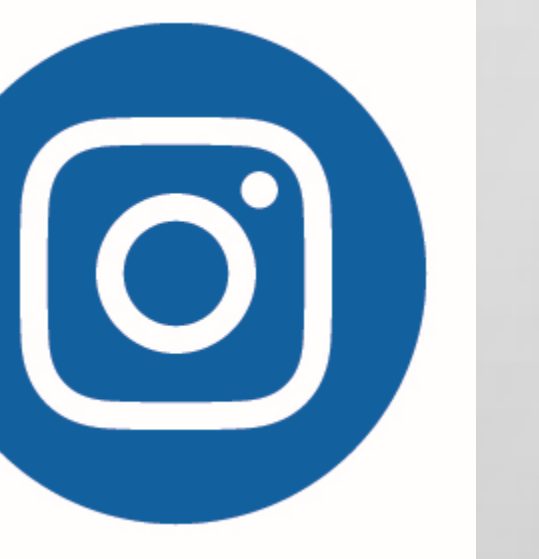


## Discussion

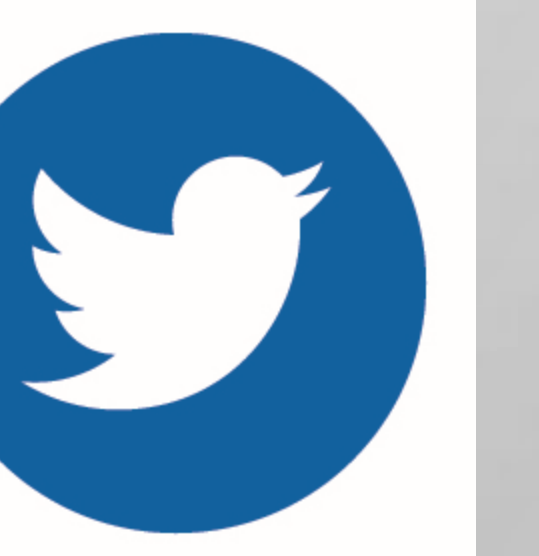
- Through “autoinfection”, *Strongyloides* is unique among intestinal nematodes in its ability to persist in humans for many years [Figure E]
- Patient likely housed *Strongyloides* as an asymptomatic carrier from Bangladesh which reactivated possibly due to an asthma exacerbation, hyperglycemia, or malnutrition due to lower socioeconomic status
- Testing for SHS is often unreliable as only 25-35% of cases in immunocompetent patients have eosinophilia, and 70% of cases may be missed on stool microscopy.
- *Strongyloides* serology is more sensitive (83-93%) and specific (95-97.7%) than stool microscopy, however, but runs of the risk of cross-reacting with other helminth infections.

## References

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