Strongyloides stercoralis, a silent killer

A case-report

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The Netherlands
• Male patient, 57 years of age
  origin from Liberia
Medical review

• Time-line
Medical review

• Patient origin from Liberia
• Living for 9 years in the Netherlands

• Medical history:
  • Chronic hepatitis B
  • Diabetes type II
• A year earlier (2011 – May):

Diagnosis of non-Hodgekin lymphoma (NHL) treated with chemotherapy
• A month earlier (2012 – April):

Hospitalized due to abdominal and respiratory complaints

• Symptoms: vomiting, nausea, fever
• Fever remained despite broad spectrum antibiotics
• Infiltrate shown on thoracic X-ray

• LAB results:
  
  **Hb:** 7.4 mmol/L ↓
  **Hct:** 0.35 L/L ↓
  **RBC:** 4.09 x10E9/L ↓
  **WBC:** 1.2 x10E9/L ↓
  **Neu:** 0.8 ↓
  **Eos:** 0.07
  **Monos:** 0.1 ↓
  **Lymphs:** 0.3 ↓
  **PLT:** 124 x10E9/L ↓
  **CRP:** 101 mg/L ↑
Suspicion of PCP => TMP-SMX (Cotrim) therapy was started combined with prednisone

After the treatment the patient was discharged from the hospital in good clinical condition.
• Recent (2012 – May):

Hospitalized due to general weakness and abdominal complaints
  • symptoms: headache, diarrhea, vomiting, nausea, fever

After extensive diagnostic examinations however no cause was found.
After 14 days, because of the persistent vomiting, a gastroscopy was performed

• The following was found:
• During the gastroscopy biopsies were taken.

After preparation and staining at the pathology department the following was seen.
H&E staining
1000x oil magnification
• Biopsies showed:

  • Worm/larvae-like structures

Because of these findings the Department of Medical Microbiology was consulted.
• Before the parasitological diagnosis was made the patient deteriorated and was admitted to ICU.
  • Mechanical ventilation
  • Broad spectrum antibiotics

• Collecting stool was difficult because the patient was suffering from ileus
Stool samples were collected and examined for parasites.

Rhabditiform larvae of *Strongyloides stercoralis*

- Genital primordium
- Short buccal cavity
- 250 µm x 17 µm
- Wet mounts
• Ivermectin therapy was started

One day after the diagnosis was confirmed:

Patient died of septicemia combined with massive bleeding from the stomach ulcers.

Conclusion: Disseminated Strongyloïdiasis
Discussion:

• How could this have been prevented?

  • No awareness for strongyloidiasis due to the lack of eosinophilia and the patient was living in the Netherlands for 9 years, no recent visits to endemic countries

  • Role of serology before start immunosuppressive therapy (screening)
Collection of BAL was not done

Are there guidelines on screening for Strongyloides concerning patients who will have immunosuppressive therapy?
Facts on Strongyloidiasis

Life cycle

- Infection is acquired through direct contact with contaminated soil.
Facts on Strongyloidiasis

• Transmission occurs mainly in tropical and subtropical regions

• 30-100 million people are infected worldwide; precise data on prevalence are unknown in endemic countries

• Strongyloidiasis is frequently underdiagnosed because many cases are asymptomatic; moreover, diagnostic methods lack sensitivity
Facts on Strongyloidiasis

• Without appropriate therapy, the infection does not resolve and may persist for life

• Infection may be severe and even life-threatening in cases of immunodeficiency

• No public health strategies for controlling the disease are active at the global level
Take home messages!

• Health-care providers should be made aware of this parasite, and particularly about the risk of disseminated infections

• Standardization of screening for Strongyloidiasis before starting immunosuppressive therapy using serology and/or PCR concerning high-risk patients

• More detailed epidemiological data on the global distribution of strongyloidiasis are needed
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