

Worm or wool? That is the question?

Sarishna Singh^{1,2}; Christoffel J. Opperman^{1,2,3}

¹National Health Laboratory Service, Green Point TB Laboratory, Cape Town, South Africa.

²SAMRC Centre for Tuberculosis Research, Division of Molecular Biology and Human Genetics, Faculty of Medicine and Health Sciences, Stellenbosch University, South Africa.

³Division Microbiology, Department of Pathology, Honorary lecture, University of Cape Town, Groote Schuur Hospital.

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***Corresponding Author:** Sarishna Singh, SAMRC Centre for Tuberculosis Research, Division of Molecular Biology and Human Genetics, Faculty of Medicine and Health Sciences, Stellenbosch University, South Africa.
Email: sarishna.singh@nhls.ac.za

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Clinical Image

With an increase in migration and travel, physicians should have an index of suspicion for parasitic infection. Parasitic worms that can affect the lung include trematodes, protozoa and nematodes [1]. Diagnostic investigations such as serology are prone to cross-reactions [2]. Blood eosinophilia may be absent in immunocompromised patients with Strongyloides hyperinfection syndrome [3]. In addition, Ascaris eggs are only passed in the stool following pulmonary symptom resolution, and many non-infectious causes of pulmonary eosinophilia have been described [1]. Therefore, direct microscopy is a valuable option to identify the parasite when larvae migrate to the lungs, which is common for many parasitic infections.

However, one should be cautious not to over-diagnose parasitic infections in sputum samples. For example, these "worm" structures, lacking internal organs, are artefacts in the images provided (Figure 1 and 2). From a parasitologist's experience, false-positive causes might include plastic remnants from when the grooves were made for the container lid, fibers if cotton wool swabs were used during sample collection or processing and organic material in stool samples. In conclusion, false positive identification can occur if a trained microbiologist does not view the slides.

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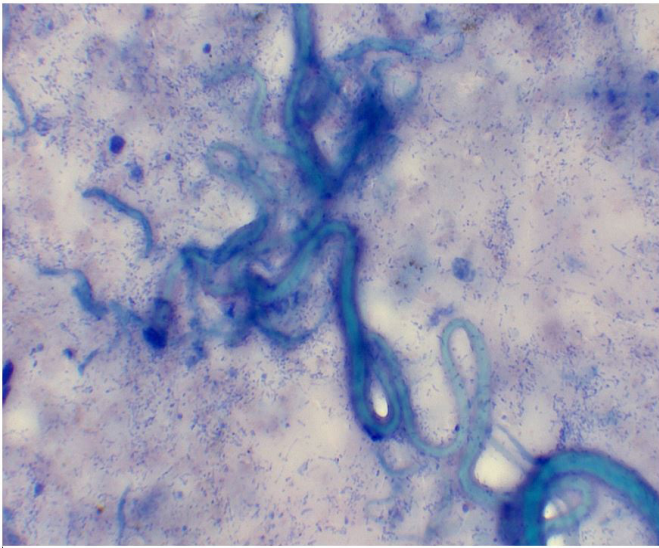


Figure 1: Wrights stain. No internal structures seen.

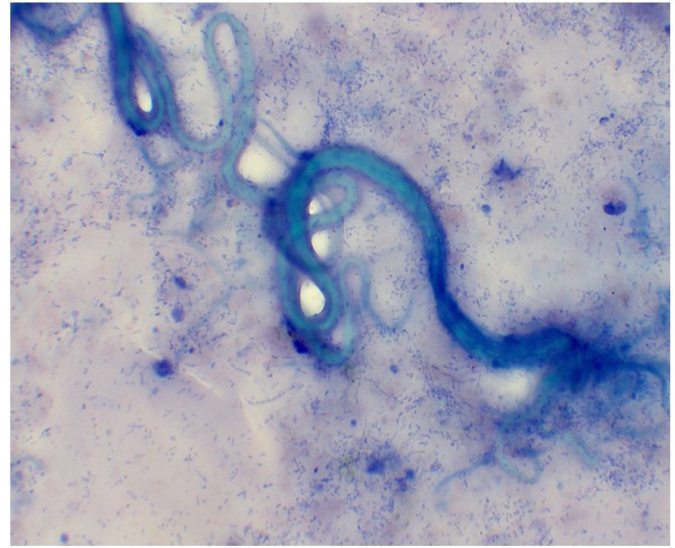


Figure 2: Wrights stain. No internal structures seen.

References

1. Kunst H, Mack D, Kon OM, Banerjee AK, Chiodini P, Grant A. Parasitic infections of the lung: a guide for the respiratory physician. *Thorax*. 2011; 66(6): 528-36.
2. Jin Y, Kim EM, Choi MH, Oh MD, Hong ST. Significance of serology by multi-antigen ELISA for tissue helminthiases in Korea. *J Korean Med Sci*. 2017; 32(7): 1118-1123.
3. Keiser PB, Nutman TB. *Strongyloides stercoralis* in the immunocompromised population. *Clin Microbiol Rev*. 2004; 17(1): 208-217.