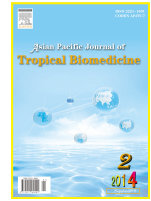




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Dust mites in a routine clinical stool sample

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ABSTRACT

We report a case of dust mite carriage in a 56-year-old gentleman. Dust mites eggs and larvae were found in a stool sample which was taken for a routine clinical examination. He was completely asymptomatic with no history of rash, airway disease or other allergic manifestations associated with dust mites. We noticed that the oval structure of mite eggs resembled helminth eggs and therefore may be misidentified during routine clinical analysis. As the patient was otherwise healthy, it was concluded that no rigorous antiparasitic therapy was necessary to eliminate dust mites from his system.

1. Introduction

Mites are small arthropods which are categorized under the subclass Acarina. They may be free living or parasitic. *Sarcoptes scabiei* and *Demodex* species have a well established clinical significance in human health, the former causing scabies infection while the latter living in the hair follicles as commensals. In addition, allergy to fecal material of house dust mites can manifest as an acute episode of asthma and/or extensive dermatitis[1].

To the best of our knowledge, limited literature has been published regarding the presence of mites in urine and stool. The few articles were present in which described the mite presence as spurious; the mites

caused subclinical infection without any symptoms[2].

2. Case report

A 56-year-old gentleman had his stool examined as part of routine annual medical checkup. History and examination were unremarkable. Stool DR revealed house dust mites in various phases of their life cycle, including egg, nymph, larvae and adult stages when viewed under a low power light microscope. The patient was recalled for a detailed history and physical examination, which revealed no remarkable findings. The subject, however, reported to have pet cats but emphasized not being responsible for their care and having minimal contact. He had no signs or symptoms of the gastrointestinal system. Signs or symptoms of allergic manifestations; cough, coryza, asthma-like symptoms that may have been associated with dust mites were not reported either.

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Another stool sample was obtained using a separate sterile stool container to eliminate the possibility of environmental contamination of the first sample, however, the subsequent stool DR yielded the same findings. Under microscope, the eggs appeared to be oval shaped and resembled helminth eggs. Small mites ranging from $59\ \mu\text{m}\times 104\ \mu\text{m}$ to $65\ \mu\text{m}\times 110\ \mu\text{m}$ in size could be seen under microscope; while the adult form was as large as $430\ \mu\text{m}\times 200\ \mu\text{m}$ (Figure 1).

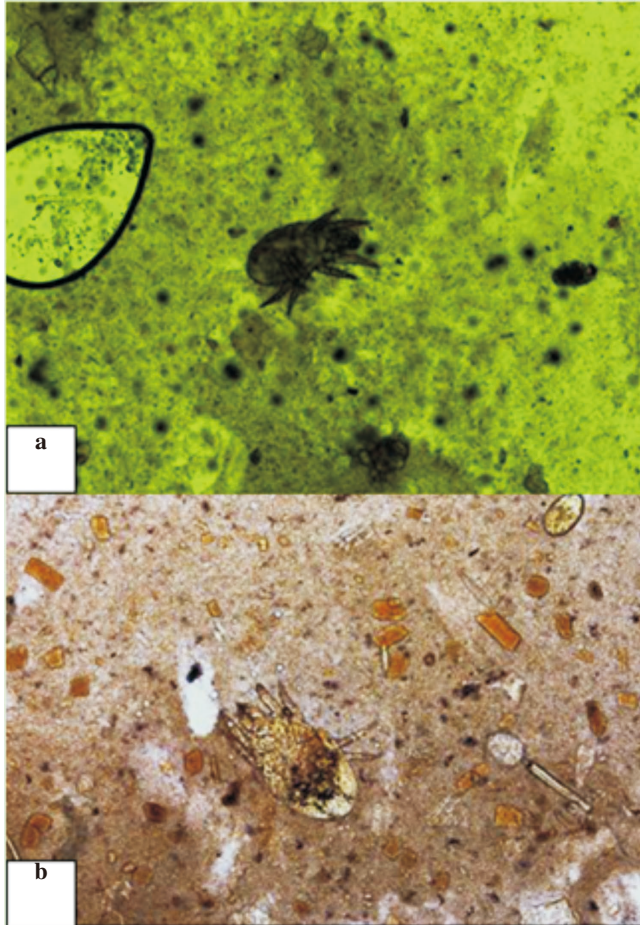


Figure 1. The microscopical observation of house dust mite found in stool sample.

a: Photograph of house dust mite with $430\ \mu\text{m}$ in length and $200\ \mu\text{m}$ in width; b: Photograph of an adult dust mite with egg in the upper right field.

As the patient was completely asymptomatic and otherwise healthy, it was concluded that no rigorous antiparasitic therapy was necessary to eliminate dust mites from his system.

3. Discussion

Mites have a well established clinical significance in humans. Presence of mites in urine has previously been reported, mainly due to genital scabies infestation, especially in immunocompromised patients, when a

greater number of mites are shed[3]. However, their medical significance is still uncertain due to a low incidence and limited data. Detection of dust mites in stool and urine is an infrequent but evident finding nonetheless. In a cohort of 1994 individuals investigated by Li *et al.*[2], a total of 161 individuals tested positive for dust mites, with only 4.61%, 1.86% and 1.60% carrying dust mites in stool, urine, and both stool and urine, respectively. Other instances have been recorded in literature in which dust mites have been isolated from systems other than the gastrointestinal and genitourinary tracts. Ryu *et al.* reported a case in which dust mites were isolated from the sputum of a medical student during routine parasitology practice[4]. He was previously healthy and asymptomatic and was found to have no eosinophilia or raised IgE levels.

We noticed that the oval structure of mite eggs resembled helminth eggs and therefore may be misidentified during routine clinical analysis[5]. To the best of our knowledge, no such case has been reported from Pakistan so far, may be in part due to misidentification of dust mite eggs with helminth eggs. Microbiologists should always bear in mind the possibility of dust mite infestation while examining suspicious specimens. This is important in regions, like ours, where intestinal parasites are highly prevalent so as to avoid unnecessary and ineffective treatment.

Conflict of interest statement

We declare that we have no conflict of interest.

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