

Journal of Coastal Life Medicine

journal homepage: www.jclmm.com



Letter to editor

doi: 10.12980/jclm.4.2016J6-6

©2016 by the Journal of Coastal Life Medicine. All rights reserved.

Contamination of beach sand by hookworm species: a small scale observation from Thailand

Beuy Joob^{1*}, Viroj Wiwanitkit²

¹Sanitation 1 Medical Academic Center, Bangkok, Thailand

²Wiwanitkit House, Bangkhae, Bangkok, Thailand

Dear Editor,

Hookworm is an important tropical nematode. The worm is a roundworm that can be seen in many tropical areas. Basically, this roundworm can cause gastrointestinal infection and chronic infection and result in hypochromic microcytic anemia, which is the common public health problem. Focusing on the worm's life cycle, the hookworm egg will be passed from intestine of infected host and hatched as larva in the soil. Based on this information, bare-footed walking is at risk. In general, hookworm is a geohelminth. It usually lives in the sand and penetrates the human's foot to cause infection. Hence, the analysis of the contamination of hookworm in sand can give useful data for disease surveillance and control. The contact to contaminated sand can be the primary origin of the infection[1]. Bojar and Kłapeć noted that "attention should also be paid to the possibility of contamination of recreational areas with the eggs of intestinal parasites by wild animals[2]." An interesting forgotten concern is the possible contamination of hookworm in sand at beach. According to a report by Mabaso *et al.*, "amounts of fine and medium sand were highest in both the coastal plain soils and in inland sandy areas and these fractions showed a significant positive correlation with hookworm prevalence and nematode loadings[3]." There is an interesting previous report showing the possibility of contamination in sand beach[4]. In some beaches, 42% of the samples were contaminated with *Ancylostoma* larvae[4]. Here, the authors reported the observation on contamination of beach sand by hookworm species in sample collected from 3 beaches in Thailand. The standard soil analysis as previously described by Wiwanitkit and Waenlor was used[5]. According to the analysis, null prevalence could be observed. This can imply the cleanness of the studied beaches. The situations in other beaches

have to be studied and verified. Since bare-footed walking in the beach is usual, the risk of getting hookworm infestation in dirty beach has to be notified to the general people. In additional, the use of alternative biological control of the worm is the new method to be notified. De Mello *et al.* mentioned the efficiency of the *Duddingtonia* genus in the control of *Ancylostoma* spp. infective larvae[6].

Conflict of interest statement

We declare that we have no conflict of interest.

References

- [1] Shinkar RM, Stocks R, Thomas E. Cutaneous larva migrans, creeping eruption, sand worm. *Arch Dis Child* 2005; **90**(10): 998.
- [2] Bojar H, Kłapeć T. Contamination of soil with eggs of geohelminths in recreational areas in the Lublin region of Poland. *Ann Agric Environ Med* 2012; **19**(2): 267-70.
- [3] Mabaso ML, Appleton CC, Hughes JC, Gouws E. Hookworm (*Necator americanus*) transmission in inland areas of sandy soils in KwaZulu-Natal, South Africa. *Trop Med Int Health* 2004; **9**(4): 471-6.
- [4] Silva PF, Cavalcanti IM, Irmão JI, Rocha FJ. Common beach sand contamination due to enteroparasites on the southern coast of Pernambuco State, Brazil. *Rev Inst Med Trop Sao Paulo* 2009; **51**: 217-8.
- [5] Wiwanitkit V, Waenlor W. Contamination of soil with parasites in a Thai hospital. *Am J Infect Control* 2005; **33**(6): 374-5.
- [6] De Mello IN, Braga FR, Monteiro TS, Freitas LG, Araujo JM, Soares FE, et al. Biological control of infective larvae of *Ancylostoma* spp. in beach sand. *Rev Iberoam Micol* 2014; **31**(2): 114-8.

*Corresponding author: Beuy Joob, Sanitation 1 Medical Academic Center, Bangkok, Thailand.

Tel: +66 24658292

E-mail: beuyjoob@hotmail.com

The journal implements double-blind peer review practiced by specially invited international editorial board members.

Article history:

Received 7 Jan 2016

Accepted 20 Feb 2016

Available online 11 May 2016