



Mini-review

doi: 10.12980/jclm.4.2016j5-184

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

Diphyllobothriasis caused by *Diphyllobothrium latum* in Southeast Asia: A new emerging fish-borne disease

Somsri Wiwanitkit^{1*}, Viroj Wiwanitkit^{2,3,4,5}¹Wiwanitkit House, Bangkhae, Bangkok, Thailand²Hainan Medical University, Haikou, China³Faculty of Medicine, University of Nis, Nis, Serbia⁴Joseph Ayobabalola University, Ikeji Arakeji, Nigeria⁵Dr. D.Y. Patil Medical University, Navi Mumbai, India

ARTICLE INFO

Article history:

Received 22 Sep 2015

Received in revised form 13 Oct, 2nd

revised form 14 Oct 2015

Accepted 29 Nov 2015

Available online 22 Dec 2015

Keywords:

Diphyllobothriasis

Southeast Asia

Infestation

ABSTRACT

Diphyllobothriasis caused by *Diphyllobothrium latum* is an important helminthiasis. It is seen in many non-tropical countries. Since it is a marine fish-borne zoonosis, it becomes an important issue in coastal medicine. However, in the few recent years, there are some reports on a new emerging diphyllobothriasis caused by *Diphyllobothrium latum* in tropical countries. In this specific short article, the authors review and present on the situation of diphyllobothriasis in Southeast Asia. Diphyllobothriasis presently becomes a new concern in tropical coastal medicine.

1. Introduction

Fish is an important food source of human beings. In the present day, it is the worldwide concern on zoonosis and the fish-borne zoonosis is also the case[1-12]. The zoonosis from sea fish is very interesting and limited mentioned. Here, the authors focus on a well-known zoonosis, diphyllobothriasis. Diphyllobothriasis caused by *Diphyllobothrium latum* (*D. latum*) is an important helminthiasis. It is also known as fish tapeworm infestation[13-15]. It is seen in many non-tropical countries. The infestation is related to the malabsorption. It can result in vitamin B12 deficiency and megaloblastic anemia can be the consequence[16]. Since it is a marine fish-borne zoonosis, it becomes an important issue in coastal

medicine. However, in the few recent years, there are some reports on new emerging diphyllobothriasis caused by *D. latum* in tropical countries. In this specific short article, the authors review and present on the situation of diphyllobothriasis in Southeast Asia.

2. Reports on diphyllobothriasis in Southeast Asia

As note, there are many publications on diphyllobothriasis caused by *D. latum* in several areas around the world but few reports are from Southeast Asia. The information from coastal countries in Southeast Asia is hereby shown.

2.1. Diphyllobothriasis caused by *D. latum* in Malaysia

Diphyllobothriasis is also reported in Malaysia. There are some new reported cases. The first case report is by Rohela *et al.* in 2002[17]. Rohela noted that the patient was a 62 years old Chinese

*Corresponding author: Somsri Wiwanitkit, Wiwanitkit House, Bangkhae, Bangkok, 10160, Thailand.
E-mail: somsriwian@hotmail.com

male seen at the outpatient clinic with complaints of watery stools and slight abdominal discomfort for 4 days[17]. The stool examination reviewed the parasite, gravid proglottids[17]. The risk history in this case is eating sashimi and the use of a single dose of praziquantel can result in a favorable therapeutic outcome[17]. Rohela *et al.* reported the second case in 2006[18]. In this case, the patient presented with a complaint of passing strands of white color flat worm in his stool that was finally confirmed as the *D. latum*[18]. The patient also had a history of raw fish intake[18]. The case was treated by a single dose of praziquantel[18].

2.2. Diphyllbothriasis caused by *D. latum* in Thailand

Diphyllbothriasis caused by *D. latum* has never been reported in Thailand. However, there are sporadic reports on similar problem, sparganosis.

2.3. Diphyllbothriasis caused by *D. latum* in Singapore, Indonesia, Brunei and Philippine

There is still no report of human disease in Singapore, Indonesia, Brunei and Philippine. This might be due to lack of study on these countries.

2.4. Diphyllbothriasis caused by *D. latum* in Myanmar, Cambodia and Vietnam

There is still no report of human disease in Myanmar, Cambodia and Vietnam. This might be due to lack of study on these countries.

3. Conclusion

Based on the review, diphyllbothriasis caused by *D. latum* already exists in Southeast Asia. The human infections have already seen but there is still no report on the contamination in marine fish in Southeast Asia. Diphyllbothriasis caused by *D. latum* presently becomes a new concern in tropical coastal medicine.

Conflict of interest statement

We declare that we have no conflict of interest.

Acknowledgment

This work is supported by personal private fund (Wiwanitkit House, Bangkhae, Bangkok, Thailand, 22.1-9-2015).

References

- [1] Denner J, Mueller NJ. Preventing transfer of infectious agents. *Int J Surg* 2015; **23**(Pt B): 306-11.
- [2] Ganter M. Zoonotic risks from small ruminants. *Vet Microbiol* 2015; **181**(1-2): 53-65.
- [3] Wiethelther AK, Beltrán-Alcrudo D, Kock R, Mor SM. Global trends in infectious diseases at the wildlife-livestock interface. *Proc Natl Acad Sci U S A* 2015; **112**(31): 9662-7
- [4] Sivaramalingam B, Young I, Pham MT, Waddell L, Greig J, Mascarenhas M, et al. Scoping review of research on the effectiveness of food-safety education interventions directed at consumers. *Foodborne Pathog Dis* 2015; **12**(7): 561-70.
- [5] Mackenstedt U, Jenkins D, Romig T. The role of wildlife in the transmission of parasitic zoonoses in peri-urban and urban areas. *Int J Parasitol Parasites Wildl* 2015; **4**(1): 71-9.
- [6] Jenkins EJ, Simon A, Bachand N, Stephen C. Wildlife parasites in a One Health world. *Trends Parasitol* 2015; **31**(5): 174-80.
- [7] Grace D. Food safety in low and middle income countries. *Int J Environ Res Public Health* 2015; **12**(9): 10490-507.
- [8] O'Connor AM, Sargeant JM. Finally, the opportunity to publish systematic review protocols, systemic reviews and guidelines in animal health, animal welfare, and food safety. *Anim Health Res Rev* 2014; **15**(1): 1-2.
- [9] Gauthier DT. Bacterial zoonoses of fishes: a review and appraisal of evidence for linkages between fish and human infections. *Vet J* 2015; **203**(1): 27-35.
- [10] Ito A, Budke CM. Culinary delights and travel? A review of zoonotic cestodiasis and metacestodiasis. *Travel Med Infect Dis* 2014; **12**(6 Pt A): 582-91.
- [11] Haenen OLM, Evans JJ, Berthe F. Bacterial infections from aquatic species: potential for and prevention of contact zoonoses. *Rev Sci Tech* 2013; **32**(2): 497-507.
- [12] O'Connor AM, Sargeant JM. An introduction to systematic reviews in animal health, animal welfare, and food safety. *Anim Health Res Rev* 2014; **15**(1): 3-13.
- [13] Dick TA, Dixon BR, Choudhury A. *Diphyllbothrium*, *Anisakis* and other fish-borne parasitic zoonoses. *Southeast Asian J Trop Med Public Health* 1991; **22**: 150-2.
- [14] Yamane Y. [Laboratory diagnosis of protozoan and parasitic infections. 2. Helminthiasis. b. Diphyllbothrium infections]. *Rinsho Byori* 1998; **108**: 215-9. Japanese.
- [15] Dick TA, Nelson PA, Choudhury A. Diphyllbothriasis: update on human cases, foci, patterns and sources of human infections and future considerations. *Southeast Asian J Trop Med Public Health* 2001; **32**: 59-76.
- [16] Gräsbeck R. Biochemistry and clinical chemistry of vitamin B12 transport and the related diseases. *Clin Biochem* 1984; **17**(2): 99-107.
- [17] Rohela M, Jamaiah I, Chan KW, Yusoff WS. Diphyllbothriasis: the first case report from Malaysia. *Southeast Asian J Trop Med Public Health* 2002; **33**(2): 229-30.
- [18] Rohela M, Jamaiah I, Goh KL, Nissapatorn V. A second case of diphyllbothriasis in Malaysia. *Southeast Asian J Trop Med Public Health* 2006; **37**(5): 896-8.