

Contamination Of The Gnathostoma Spp Infective Stage Larvae In Fluta Alba Sold In Bangkok

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Citation

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Abstract

In Thailand *Gnathostoma spinigerum* is the major causative agent of human gnathostomiasis. Usually, humans acquire the infection by consumption of *G. spinigerum* L3s infected hosts as partially cooked or uncooked food. Of several uncooked food, the highest prevalence of *G. spinigerum* L3s was found in *Fluta alba* (swamp eels). In Thailand, data of the prevalence and concentration of the parasite in these second intermediate hosts are limited. To provide this basic public health information, study of the distribution of *Gnathostoma* infective larvae in second intermediate hosts is necessary. We report here the findings of a study of *G. spinigerum* L3s in the livers of swamp eels from several wandering eel selling stalls in Bangkok to fulfill those previous studies. A total of 368 viscera of swamp eels for this study were obtained from several wandering eel selling stalls in order to study the prevalence of contaminated gnathostome L3s. The prevalence of L3s contamination is 15 %. The average number of larvae recovered was about 0.02 larvae/g of liver. In addition, there were also other recovered parasites such as *Acanthocephalans* and minute flukes. the authors concluded that the contamination of L3 in the swamp eels in Thailand is high and can be seen in any selling sources or season although there are some previous reports on the setting or seasonal predominance of contamination. We hypothesize that the finding is due to the wide distribution of the swamp eels from the original sources to several selling places, markets and wandering stalls in Thailand. The better transportation system in Thailand at present can be solution of this finding.

INTRODUCTION

In Thailand *Gnathostoma spinigerum* is the major causative agent of human gnathostomiasis [1]. The disease has also been reported in Japan, Philippines, Thailand and other areas where raw or pickled fishes are consumed [2,3,4]. Clinical manifestations of human gnathostomiasis are resulted from migration of immature larvae (L3s) and presented as painful pruritic swelling known as cutaneous larva migrans. Usually, humans acquire the infection by consumption of *G. spinigerum* L3s infected hosts as partially cooked or uncooked food.

Of several uncooked food, the highest prevalence of *G. spinigerum* L3s was found in *Fluta alba* (swamp eels) [5]. In Thailand, data of the prevalence and concentration of the parasite in these second intermediate hosts are limited. To provide this basic public health information, study of the distribution of *Gnathostoma* infective larvae in second intermediate hosts is necessary. We report here the findings of a study of *G. spinigerum* L3s in the livers of swamp eels from several wandering eel selling stalls in Bangkok to fulfill those previous studies.

MATERIALS AND METHODS

A total of 368 viscera of swamp eels for this study were obtained from several wandering eel selling stalls in April 2004 in order to study the prevalence of contaminated gnathostome L3s. In collection of gnathostome larvae the livers were separated from the visceral organs and washed with tap water. The individual liver was then digested with the same protocol as our previous study [6]. The gnathostome L3s from each sediment were identified and counted under a stereomicroscope.

RESULTS

The prevalence of L3s contamination is 15 %. The average number of larvae recovered was about 0.02 larvae/g of liver. All gnathostome larvae from these studies were confirmed to be *G. spinigerum*; the cephalic hooklets had the typical shape belonging to *G. spinigerum* as described by Daengsvang [1]. In addition, there were also other recovered parasites such as *Acanthocephalans* and minute flukes.

DISCUSSION

Gnathostoma spinigerum has been reported to be the major

causative agent of human gnathostomiasis [1]. Generally, the most common outcome of human gnathostomiasis is intermittent cutaneous migratory swelling. However, the disease can cause serious effects and can be fatal when the parasite migrates to the eye or central nervous system. Asian people, including Japanese and Thais, believe that consumption of grilled eels benefits for health. In this study, the prevalence of contamination is 15 %, higher than that in the previous report (7 %) in a market in Bangkok [7]. Although this study was performed in the summer season, the prevalence is as high as that reported in the rainy season.

Therefore, the authors concluded that the contamination of L3 in the swamp eels in Thailand is high and can be seen in any selling sources or season although there are some previous reports on the setting or seasonal predominance of contamination [5, 7,8]. We hypothesize that the finding is due to the wide distribution of the swamp eels from the original sources to several selling places, markets and wandering stalls in Thailand. The better transportation system in Thailand at present can be solution of this finding.

In this study, we also first reported the contamination of swamp eels by the other parasites. Although those detected parasites are low medically important it can be the new emerging infectious problem. Further studies on these parasites are also recommended.

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