A follow-up examination of intestinal parasitic infections of the Army soldiers in Whachon-gun, Korea

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Abstract: A follow-up stool examination was done to know the status of intestinal parasitic infections in Army soldiers who were stationing in Whachon-gun, Kangwon-do, Korea in 1993. Of 233 examined soldiers, Infections with Clonorchis sinensis (0.4%), Metagonimus spp. (0.9%), Echinostoma hortense (0.4%), Neodiplostomum seoulensis (0.4) and Giardia lamblia (3/233) were found. E. hortense and N. seoulensis infections were each 75th, and 27th cases in Korea. Regular control program of intestinal parasitic infections might be able to contribute to diminish the prevalence rate in young Army soldiers in Korea.

Key words: Epidemiology, soldier, Clonorchis sinensis, Metagonimus spp., Echinostoma hortense, Neodiplostomum seoulensis, Giardia lamblia, Korea

Recently there was a report of the prevalence rate of intestinal parasitic infections in Army soldiers working in Whachon-gun, Kangwon-do, Korea. Clonorchis sinensis, Metagonimus spp. and Giardia lamblia were major parasites (Huh & Huh, 1993). We performed the follow-up examination at the same Corps a year after, in December 1993. We also examined the stools of another Artillery Corps in Whachon-gun for the control of intestinal parasitic infections in August 1993. We used formalin ether concentration technique for the 117 Army and 116 Artillery soldiers' stool. At the follow-up examination for Army soldiers, we could find a C. sinensis, a Metagonimus spp., a Echinostoma hortense and a G. lamblia infections. Of the soldiers in the Army Corps examined last year, half members were followed-up. No reinfection was detected a year after. Positive cases were from all newly recruited soldiers. All infected soldiers were recruited after the previous examination. Of Artillery soldiers, a Metagonimus spp., a Neodiplostomum seoulensis (Hong and Shoop, 1994) and two G. lamblia infections were found.

Ten eggs of E. hortense from 21-year-old man were measured and the size was 120-148 X 75-83(mean 138 X 79) micrometer. Eggs were elliptical, symmetrical, thin-shelled, golden-yellowish, and packed with yolks. Worm recovery with Magnesium sulfate purgation after praziquantel (Distocide®, Shinpooq Pharmaceutical Co.) 600 mg treatment was tried but failed. He had complained of intermittent diarrhea 3-4 times a week immediately after eating raw frog. Hyla arborea japonica in June, 1993 when he was recruited in this Corps, i.e. six months before the stool examination. He had been healthy without any gastrointestinal symptom before military recruitment. He said that he did not eat fresh water fishes. His hometown was Seoul, the capital of Korea. Only one egg of N. seoulensis from 21-year-old man was found. The egg was

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97.5 × 62.5 micrometer in size, elliptical but asymmetric, thin-shelled, golden-yellowish and operculated. Inside the shell, yolks were seen. He said that he had eaten the fried frog with friends of his at Yongyang, his hometown before one and half year but not fresh water fishes. He had been also healthy with no gastrointestinal symptom. Worm could not be recovered with same collection method as above.

Results of this stool examination is comparable with that of same age (20-24 years-old) and sex (male) group of nation-wide survey: Ascaris lumbricoides 0.2%, Trichuris trichiura 0.1%, C. sinensis 1.8%, M. yokogawai 0.2% (Ministry of Health and Social Affairs and Korea Association of Health, 1993). Any survey data from recruited young soldiers can be a reflection of same age group. The fact that there was no reinfection of previously detected soldiers told us that it would be a good investment to try to find parasitic infections and treat the infected ones during the military recruitment period. Those control program can contribute to diminish the prevalence rate in a general population in Korea where the military service is compulsory to young healthy men.

Usually the parasitic infections of soldiers were believed to be originated from their hometowns (Huh & Huh, 1993). Only some problems were job-related. For example, neodiplomatiasis, sparganosis, echinostomiasis and gardiasis might be due to eating raw frog and/or snake, or due to drinking contaminated water at stream during the survival exercise (Hong 1986). After the detection of neodiplomatiasis cases from soldiers, eating of raw frogs or snakes was officially prohibited in the Korea Army from mid-1980. Present case of echinostomiasis is interesting since he ate not fresh water fishes but raw frogs. The frog was identified as a second intermediate host in Japan, but not in Korea (Chai and Lee, 1990).

This finding suggests that the frog also can be a second intermediate host in Korea. Chai and Lee (1990) reported that the number of cases of Echinostoma hortense infection was 79 till 1990. However, two cases from Ahn and Ryang (1986) were only identified as Echinostoma spp., and another two cases could not be traced in literature (Ryang,1990; Chai et al., 1993). We would like to correct the number of human cases of E. hortense infection in Korea as 76 including the present one. The present case of neodiplomatiasis was believed to be infected through the eating of undercooked frog. This is the 27th case of human neodiplomatiasis (Seo, 1990)

REFERENCES

화천군 소재 일부 장병의 장내 기생충 감염률과 호르텐스극구흡충,
Neodiplostomum seoulensis의 감염예

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강원도 화천군 소재 두 부대 장병에서 장내 기생충 관리를 위하여 1993년 포르말린 에테르 점반
법으로 대면검사를 하였다. 233명의 과장자가 가운데 간흡충(1/233), 메타코나포스(2/233), 호르텐
스극구흡충(1/233), Neodiplostomum seoulensis(1/233) 중간과 박물관모충의 포남(3/233)을 발
견하였다. 호르텐스극구흡충 감염은 문헌상 제75국내 인체감염에, N. seoulensis 감염은 제27 인체
감염이다.

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