HAPLORCHIS PUMILIO (LOOSS) INFECTION IN MAN IN NORTHEASTERN THAILAND

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INTRODUCTION

Reports of intestinal trematode infections in man in Northeastern Thailand include *Echinostoma malayanum*, *Echinostoma revolutum*, *Hypoderaeum conoideum* and *Echinostoma ilocanum* (Bhaibulaya *et al.*, 1964, 1966; Yokogawa *et al.*, 1965; Radomyos *et al.*, 1982) *Phaneropsolus bonnei*, *Prosthodendrium molenkampi*, *Haplorchis taichui* and *Haplorchis yokogawai* (Manning *et al.*, 1971). In this report, another species found infecting man in Northeastern Thailand is *Haplorchis pumilio*.

Haplorchis pumilio has been reported from China, Iraq, Malaysia, the Philippines, India and Srilanka (Pearson, 1964; Pearson and Ow-Yang, 1982).

MATERIALS AND METHODS

A clinical trial of praziquantel in human opisthorchiasis (Bunnag and Harinasuta, 1980) was carried out in 411 patients at the Hospital for Tropical Diseases, Bangkok, from April 1979 to December 1982. After treatment stool specimens were collected on the day treatment was initiated and for three consecutive days thereafter. The worms were separated from the faeces by sedimenting followed by stereoscopic microscope examination of the sediment. Flukes recovered were fixed in 8% formalin. Some were first stained with Semichon acetic carmine and counterstained with fast-green and others were stained only with fast-green. All stained specimens were mounted in permount and identified. Patients records were retrospectively analysed accordingly with age, sex, occupation, residence, dietary habits, symptoms and signs.

RESULT

Twelve of 411 cases were found infected with a total of 301 *Haplorchis pumilio* adult worms. The description of this worm is based on a study of specimens recovered from patients. Adult worm : (Fig. 1) body small, pyriform, elongate, 654 (527 - 776) microns long and 279 (217 - 352) microns wide. The body scales are ribbed and the ends of the ribs give the free margin a scalloped appearance, cover the entire body surface. Oral sucker is slightly subterminal, 58 (44-75) microns long and 65 (49-83) microns wide. Prepharynx short, pharynx oval, 37 (31-41) microns long and 30(23-39) microns wide. Esophagus, 113 (103-129) microns long. Intestinal ceca thick walled, 201(141-244) microns long, do not extend to mid-testis. Ventral sucker is small, heart-shaped with two knob-like antero-lateral lobes, 54 (44-67) microns long and 43(36-49) microns wide, armed with single row of 32(27-39) spines, bearing two or three teeth, often appearing I-shaped or A-shaped. Antero-lateral lobes have a few spines.

Testis single, circular, situated posterior to the ovary, 75(57-103) microns. Seminal vesicle of two chambers, proximal vesicle, 38(27-56) microns long and 32(29-45) mi-

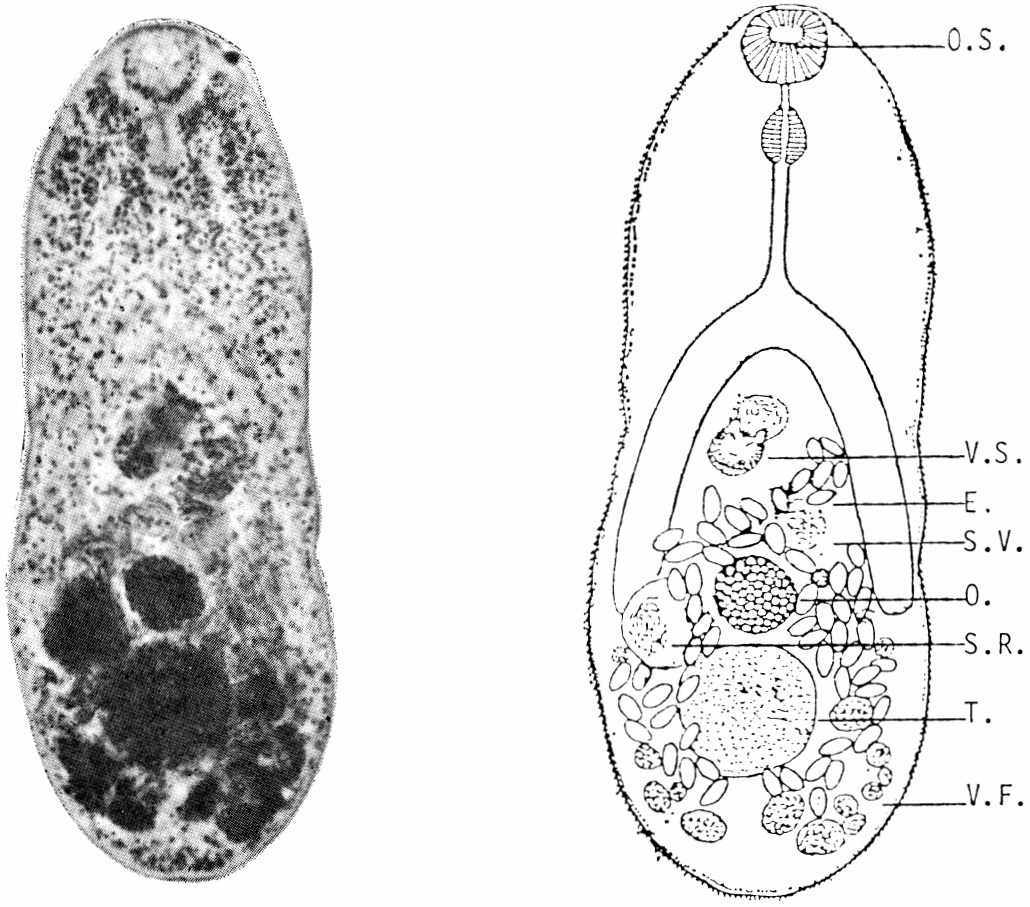

Fig. 1—E. = egg, O. = ovary, O.S. = Oral sucker, S.R. = seminal receptacle, S.V. = seminal vesicle, T. = testis, V.F. = vitelline follicle, V.S. = ventral sucker.

crons wide, distal seminal vesicle, 53(45-65) microns long and 51(41-61) microns wide, situated anterior to the left of ovary. Seminal receptacle, 64(34-49) microns long and 57 (34-68) microns wide, located along the right margin between ovary and testis.

Ovary circular, in the posterior half of the body immediately anterior to testis, 51(41-64) microns in diameter. Uterus occupies virtually all space between the other organs in posterior half of the worm. Vitelline glands are regular follicles situated from the level of the anterior margin of the ovary to the posterior end of the body.

Eggs (Fig. 2) (25 uterine, dissected from three worms) operculated, thick shelled 32 (30-35) microns long and 16(15-18) microns wide.

Eleven patients came from the northeast and one from the north of Thailand (Table 1 and Fig. 3) ten were farmers, one was a labourer and one was a merchant. There were nine males and three females ranging in

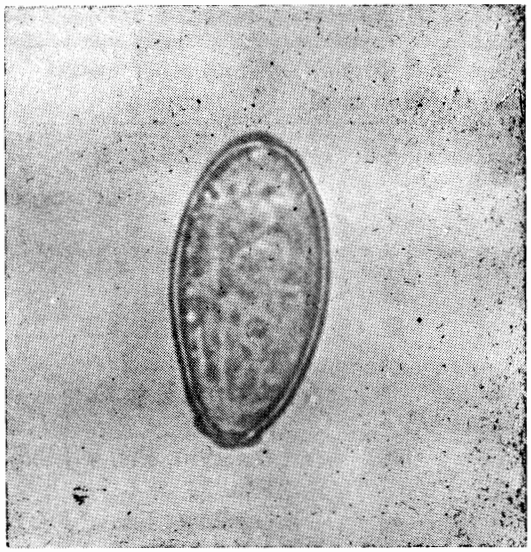

Fig. 2—Egg of *Haplorchis pumilio* from man.

age from 23 to 46 years. All admitted consuming raw fish, prawns, snails etc. Stools were positive for *Opisthorchis viverrini* eggs before admission to the hospital. Six patients received a single dose of 40 mg/kg body weight of praziquantel and six patients received a single dose of 50 mg/kg body weight. Worms were recovered from stools 1-3 days after treatment, the number of *Haplorchis pumilio* from each patient varied from 1-62. Stools on day 30 and 60 after treatment were negative for all trematode eggs.

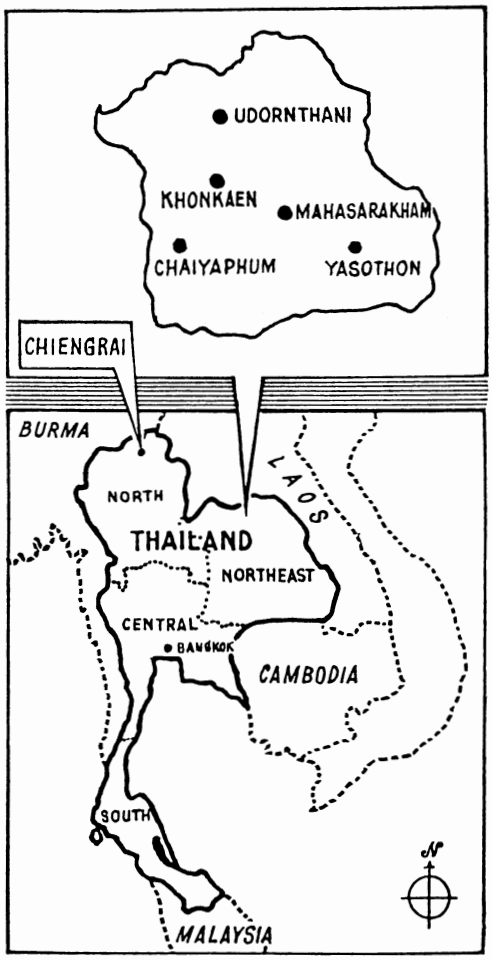

Fig. 3—Map showing Northern and Northeastern Thailand.

DISCUSSION

The discovery of *Haplorchis pumilio* in Northeastern Thailand has brought to three the number of *Haplorchis* spp. presently known to parasitize man in this country. In the Philippines, it has been reported that *Haplorchis* spp. can cause serious pathologic changes in the human host. Eggs have been found in the heart, brain and spinal cord and the adult worms have been found to migrate through the intestinal wall (Africa *et al.*, 1937 a, b). In northern Thailand, three cases have been reported wherein the heterophyid worm, *Stellanthchasmus falcatus* was observed in the human ileum (Tantachamrun and Kliks, 1978). Heterophyidiasis and opisthorchiasis cannot be differentiated by egg morphology alone since the epidemiology of both diseases are similar often occurring in the same endemic area. However, the higher prevalence of *Opisthorchis viverrini*, and history of consumption of raw fish provides the provisional diagnosis. Recovery of adult worms after treatment with anthelmintics confirms the diagnosis for species identification.

Table 1 Praziquantel treatment for opisthorchiasis and *H. pumilio* recovered in stool.

Patient No.	Sex	Age	Residence Province	Praziquantel mg.	No. of *H. pumilio* recovered in stool	No. of other worms recovered
1.	F	34	Chaiyaphum	40 mg/kg	3	O.v.581, P.m. 585, T. sag. without scolex 4 ft. long
2.	M	46	Khon Kaen	40 mg/kg	22	P.m. 12, E.v.♀ 1
3.	M	34	Mahasarakham	40 mg/kg	59	P.m. 31, E.i. 3
4.	M	23	Udornthani	40 mg/kg	62	O.v. 21, E.v. ♂28 ♀25, P.m. 2, H.t. 9
5.	M	31	Chiang Rai	40 mg/kg	3	O.v. 14, H.y. 73, H.t. 30
6.	F	25	Udornthani	50 mg/kg	48	O.v.1910, E.v. 4 ♂ ♀6, P.m. 33
7.	M	31	Udornthani	50 mg/kg	43	O.v.2561, E.v. ♂1 ♀2
8.	M	30	Udornthani	50 mg/kg	2	O.v.65, P.m. 5
9.	M	42	Udornthani	50 mg/kg	41	O.v.1196, E.v. ♂1 ♀7, H.t. 1, P.b. 2, P.m. 7, T. sag. scolex 1
10.	M	23	Udornthani	50 mg/kg	1	O.v. 157
11.	M	34	Udornthani	50 mg/kg	17	O.v. 380, E.v. ♂1, E.m. 3, P.m. 6, H.t. 1
12.	F	25	Yasothorn	40 mg/kg	1	P.b. 4

Stools negative for all Trematode eggs on day 30 and 60 post treatment

O.v. = *Opisthorchis viverrini*, P.m. = *Prosthodendrium molenkampi*
T. sag. = *Taenia saginata*, E.v. = *Enterobius vermicularis*,
H.t. = *Haplorchis taichui*, H.y. = *Haplorchis yokogawai*,
E.i. = *Echinostoma ilocanum*, *P.b.* = *Phaneropsolus bonnei.*
E.m. = *Echinostoma malayanum.*

SUMMARY

During a clinical trial of praziquantel for human opisthorchiasis, *Haplorchis pumilio* Looss were recovered from the stools of 12 patients. This is the third species of *Haplorchis* spp. reported from man in Thailand.

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