CASE REPORT

SUBCUTANEOUS ABSCESS OF NECK, A GRANULOMATOUS REACTION TO EGGS OF *PARAGONIMUS* : A CASE REPORT FROM NORTHERN THAILAND

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The first case report of human paragonimiasis in Thailand was described by Prommas in 1928, a patient from Lom Sak District, Phetchabun Province, north Thailand. The second was by Harina suta *et al* in 1957, in a patient from Saraburi Province, central Thailand (Miyazaki and Vajrasthira 1967). Many epidemiological surveys have been carried out after and resulted that there were at least six species of *Paragonimus* in Thailand (Yokogawa *et al,* 1962; Vanijanonta *et al.* 1981; Benjapong *et al* 1984). Only two species have been found to be infective to man in Southeast Asia including Thailand: *P. westermani* and *P. heterotremus.* The latter has been known to cause the majority of paragonimiasis in Thailand (Vanijanonta, 1981). Saraburi, Nakhon Nayok the adjacent province and Loei Province reveal the endemic areas (Miyazaki and Vajrasthira, 1967). Paragonimiasis has been found sporodically in Maharaj Nakorn Chiang Mai Hospital, Chiang Mai, Thailand. There were three unpublished cases of pulmonary and two of cerebral paragonimiasis admitted in this hospital. The species involved in all mentioned cases was assumed to be *P. westermani* without identifying any adult worms.

Recently, the author received a surgical specimen sent for histopathological examination from Lamphun Hospital, the adjacent provincial hospital to Chiang Mai. Eggs of *Paragonimus* species were indentified in the tissue.

A 29 year-old man from Pa-Phai village. Lee District. Lamphun Province, 100 km south to Chiang Mai came to Lamphun provincial hospital as out patient with one month history of a left cervical subcutaneous mass. The clinical examination revealed a chronic abscess at just below the left mandibular angle, 3 × 3 × 3 cm in estimation. Incision and drain was the treatment and the patient came back again 4 months after with the recurrence of the cystic lesion. Incision and drain was performed again with incisional biopsy. The specimen sent to the Department of Pathology, Faculty of Medicine, Chiang Mai, was fragments of soft tissue 0.5 - 1 cm size represented the wall of a cystic lesion with cellular debris content (Fig 1). Distorted and degenerated parasitic eggs of 80 - 100 micron size showing uniformly thickened birefringent shell (Fig 2,3), as features of *Paragonimus* species, were indentfied in the fibrogranulomatous cyst wall. Eosinophils and lymphoplasma cells infiltrate was seen. Lymphoid aggregation with germinal center was present adjacent to the fibrogranulomatous cyst wall. The attendant physician was notified and the patient was asked for further definitive treatment and follow up but the patient never came back again.

Epidemiologically, Saraburi and Nakhon Nayok Provinces are the well known endemic areas of paragonimiasis in Thailand. Cases of paragonimiasis have been sporodically found in some provinces in the north of Thailand. The

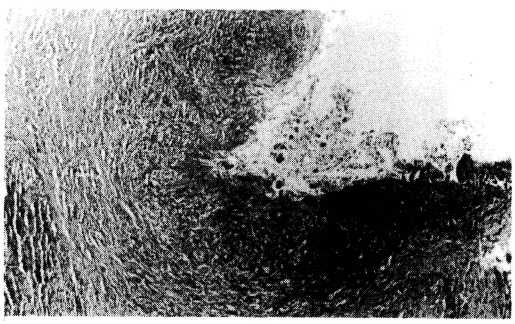

Fig 1 —Subcutaneous soft tissue with fibrosing granulomatous wall of abscess with central cellular debries, H and E, Obj 4 X.

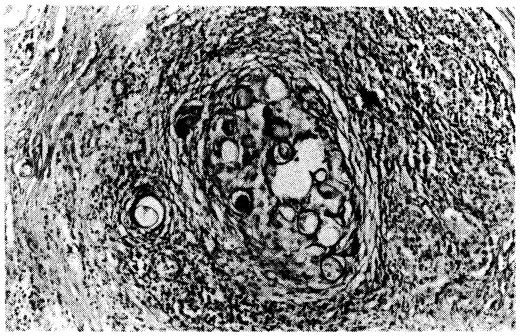

Fig 2 —Fibrosing graunulomas with eosinophilic and lymphohistiocytic infiltrate and several degenerated eggs of *Paragonimus* species, H and E, Obj 10 X.

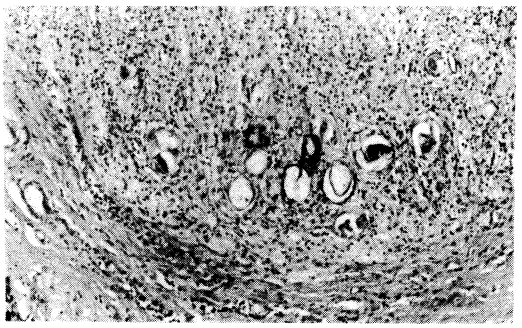

Fig 3 —Operculated egg of *Paragonimus* in a fibrosing granuloma, H and E, Obj 20 X.

most endemic area of the Northern Thailand is Chat Trakarn District. Phitsanulok Province. Few cases were discovered from Chiang Khong District. Chiang Rai. Three of the five cases which found in Maharaj Nakhon Chiang Mai Hospital are the patients who came from Chiang Rai. This reported case came from Lee District of Lamphun where *Paragonimus* has never been found before. It is interesting to known whether or not this area has intermediate hosts of *Paragonimus* to complete their life cycles, but the problem is that we cannot communicate with this patient for more information. At least, it is important to know how he lives in the village, whether or not he is an immigrant and so on.

Concerning the site of lesion in this case, subcutaneous tissue of neck is an unusual area to identify the adult worm or eggs of *Paragonimus*. The route of migration of the larva of *Paragonimus* in animal experiments has been studied in details by many authors (Yokogawa *et al*, 1962; Ahmad *et al*. 1977; Waikagul *et al*, 1986). The results of those studies were clear that the route of migration and maturation of the larvae (metacercariae) to adults were different from species to species of hosts, but the common sites that could find the worm after penetrating the intestinal wall were abdominal cavity, abdominal wall, liver, deep muscles, diaphragm, pleural cavity, intrapleural wall, lung, and occasionally thoracic muscle and foreleg (in animal experiment). These studies explained the route of migration of the worm and pathogenesis of human pulmonary paragonimiasis clearly, however, the migration of the parasite to the brain in cerebral form is still unclear. Although perivascular and perineural areolar tissues are generally accepted to be the pathway of migration, intra-arterial and intravenous routes have been postulated (Meyers and Neafie, 1976). The presence of this parasite or its eggs as in this reported case may support the perivascular and perineural areolar tissue pathway.

It is clear that man gets the parasite by ingesting of the metacercaria laval stage of *Paragonimus* which contaminate uncooked or inadequately cooked fresh water crab (Sharma, 1989). However, hand manipulation of the crabs during the preparation of food may cause food contamination of the parasitic larvae because the hemolymph of the crabs can carry the metacercariae of *Paragonimus* and contaminate hands of the cook (Komalamisra *et al*, 1988; Sachs and Cumberlidge, 1990).

The diagnosis in this case was based on histopathological findings. The parasitic eggs of this shape and size can be grouped into either *Schistosome* or *Paragonimus* species. The birefringence of egg shell was used as the criteria to discriminate the egg of *Paragonimus* from the nonbirefrigent ones of the Schistosome (Meyers and Neafie, 1976, Michlhorn, 1988). Bottom spines in Schistosome eggs and operculum in those of *Paragonimus* are not often appreciably seen in section. In host tissue reaction, adult worms usually induce suppurative lesions, for example microabscess as responses to their metabolic products while degenerated eggs give rise to granulomatous reaction (Mchlhorn, 1988).

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