

PULMONARY LESIONS OF EXPERIMENTAL PARAGONIMIASIS IN DOMESTIC CATS

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Paragonimus westermani is a trematode parasite that infects man and animals. More than 40 species belonging to genus *Paragonimus* have been reported from Asia, America and Africa. It is a common respiratory disease in humans who consume raw crustacean meat and *P. westermani* is the only species that is known to be infective to man. Altogether four species of *Paragonimus* namely, *P. westermani*, *P. compactus*, *P. macrorchis*, and *P. siamensis* were reported from animals in Sri Lanka. Recently *P. westermani* and *P. siamensis* were identified by using molecular techniques in Sri Lanka. However, the pathogenicity of this species has not yet been studied.

Two cats were infected with *P. westermani* using metacercariae obtained from the hepatopancrease of the fresh water crabs (*Perbrinckia endodis*) collected from waterways and rice fields in Hedeniya area of the Central Province. Sixteen metacercaria were given orally to one cat and other was injected with 12 metacercaria intraperitoneally. They were monitored regularly for 114 days in a closed cage, euthanised and subjected to a detail *post mortem* examination.

Grayish-white nodules varying from 0.8-1.7 cm were observed in the severely consolidated lungs. The cyst number was different in two cats; 5 in the intraperitoneally-infected cat and 2 in the orally infected cat. The microscopic picture of the cyst consisted of thick fibrous core around the paired flukes, which was laden with monocytes, macrophages and lymphocytes. Hyperaemia, hemorrhage and haemociderosis were present in the pneumonic foci of the lung outer to the worm cyst. A stratified squamous epithelium was noted immediately next to the fluke and small portion of the worm was covered by an eosinophilic cellular exudates. The peri-bronchioles lymphoid aggregation and glands were severely proliferated. The bronchiolar lumen was laden with neutrophils and eosinophils indicating bronchitis and bronchopneumonia. The alveolar lumen of the lungs were laden with eosinophils, neutrophils and macrophages in the pneumonic foci and the interstitium was thick. *Paragonimus* eggs were scattered within the cyst and in the vicinity of the cyst that was surrounded by eosinophils, neutrophils and macrophages. In some instances fluke ova were degenerated and extensively infiltrated with inflammatory cells.

The pathological changes observed *P. westermani* in this experiment is highly consistent with chronic granulomatous pneumonia characterized by infiltration of eosinophils, neutrophils, macrophages, and proliferation of fibrous tissue around the flukes and the worm eggs. In addition bronchitis, bronchopneumonia and interstitial pneumonia was evident in the lungs of infected cats.