

BODY OF REPORT

SEATO Medic Study No. 91 The Pathogenesis of Opisthorchis viverrini
Infections

I. Morbid Anatomic Changes in Naturally
 Infected Cats and Dogs in Udorn

II. The Pathogenesis of Laboratory Infected
 Cats

Project No. 3A 025601 A 811 Military Medical Research Program
S. E. Asia

Task 01: Military Medical Research Program
SEASIA (Thailand)

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 Department of Geographic Pathology

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Objective: The objective of the first part of the study is to describe the morbid anatomic changes found in the natural infection with Opisthorchis viverrini in cats. In the second part of the study, the objective is to study the host reaction to known numbers of metacercariae with known durations of infection in order to describe the pathogenesis of the infection.

Description: For the first part of the study, 25 wild domestic cats were obtained from rural villages around Udorn in northeastern Thailand. All stools were collected from each cat for three days and the number of eggs per gram of feces was determined. Five of the cats were sacrificed and the number of worms were counted in the liver of these cats. From these data the number of eggs produced per worm per day was estimated, and from the data on the number of eggs per

gram feces, the number of worms in the livers of the 11 autopsied cats will be estimated. In addition to studying the 11 cats which were completely autopsied and in which estimates of a number of worms were made, 41 additional cat autopsies were performed by a technician in Udorn. These animals have not been completely studied. For the second part of the study, rabbits and cats have been infected with doses of approximately 200 metacercariae. These animals are being killed at intervals from 1 day to 1 year.

Progress: A report of the findings in the first portion of the study was given in the last Annual Progress Report and at the 5th Congress of the International Academy of Pathology. Additional naturally infected cats autopsied by technicians and by the senior investigator (30 cats) have been collected but not completely studied.

Initial study of experimentally infected cats show well developed changes by 30 days but little scar around ducts. By 60 days, considerable scar tissue was present. Studies of changes before 30 days have not been completed.

Work with rabbits was unsatisfactory and will have to be repeated because many of the rabbits had infection of the liver by other parasites. This was particularly true of animals infected for less than 30 days.

Summary and Conclusion: Infection with the liver fluke, Opisthorchis viverrini causes marked inflammatory reaction in the portal areas of the liver which is associated with scarring of the portal areas. The ducts which contain flukes become ectatic and developed many outpouchings of the walls. It appears that the degree of scarring and inflammation in portal areas is related to the duration of infection and the severity of the infection.

References: Nye, S.W., Wykoff, D.E., Laixuthai, B., & Harinasuta, C.: "Comparative and Geographic Pathology of Opisthorchis viverrini Infection: Naturally Infected Cats", Paper presented to the 5th Congress of the International Academy of Pathology in London, 26 June, 1964.