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Author(s)	SAKAKIBARA, Yoshimi
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STUDIES ON ULTRASONOGRAPHY OF THE LIVER IN RATS EXPERIMENTALLY INFECTED WITH *TAENIA TAENIAEFORMIS*.

Yoshimi SAKAKIBARA

Laboratory of Pathobiology,
Department of Veterinary Clinical Sciences,
School of Veterinary Medicine,
Hokkaido University, Sapporo 060, Japan

In rats infected with *Taenia taeniaeformis*, the parasite is harbored in the liver as forming cysts. Ultrasonographic (US) findings on these parasitic cysts have not been reported. This study, therefore, evaluated changes in eighteen 6-week-old male Wistar rats. Each of these rats was infected orally with 200 eggs of *Taenia taeniaeformis* and US examination was performed from day 3 to the 14th week postinfection (PI). In addition to US, hematological, biochemical, serodiagnostic and pathological tests were carried out.

Under US examination, parasitic cysts could be imaged as small anechoic areas surrounded by an echogenic rim from the 2nd week PI. It was possible to visualize cysts as small as 3 mm in diameter. From the 4th week PI, parasitic cysts were occasionally accompanied by echogenic particles in the anechoic matrix which originated from formation of the protoscolex. By the 10th week PI, almost all parasitic cysts appeared to be hyperechogenic. Pathologically, the gross appearance of the cysts closely corresponded with the sonographic features stated above.

Hematologically, the numbers of eosinophils increased after infection, and the peak was observed at the 6th week PI. From the biochemical tests, a correlation in the pattern of changes occurring in both aspartate aminotransferase (AST) and alanine aminotransferase (ALT) was observed. The activities of both enzymes increased and peaked by week 2 PI then fell back to normal and stabilized. These results were in agreement with the histopathological changes in which there was initial damage to the liver parenchyma during cyst formation. The antibody response against *Taenia taeniaeformis* (metacestode) were assessed by Western blotting. Antibody responses were detected after the 5th week PI, even though the parasitic cysts could be detected ultrasonographically as early as the 2nd week PI.

The results of the study suggest that US can detect parasitic cysts in the liver in rats infected with *Taenia taeniaeformis*. It further proved that cysts could be identified earlier than was possible with serodiagnosis. US is therefore, recommended for the diagnosis of liver parasitic cysts like hydatid cysts as well as for following up development of metacestodes in the liver. These findings may further be used in small animal practice for the detection of small focal lesions located in parenchymal organs.