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Author(s)	MWANZA, Timothy
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perimental methods. The DNA sequence of mitochondrial cytochrome c oxidase subunit I gene (COI) of the taeniid cestode from snow leopard, *Uncia uncia* was obtained and compared with that of *Taenia hydatigena*. The sequences differed at 34 of the 384 (or 8.6%) nucleotide positions examined. The cestode was identified as *Taenia kotlani*. The taxonomical belongings of the metacestodes of *Mesocestoides lineatus* collected from *Microtus brandti* in Mongolia was first proved on the basis of the adult tapeworms obtained from the experimentally infected dogs.

The distribution of helminths was not restricted to certain natural zone, due to the interchanges mainly in steppen zone, which is sandwiched between forest and desert. In general, the helminth fauna of wild mammals in Mongolia suggested very old and heterogeneous character, consisting of the species that specific to the Afro-Asian deserts, the Eurasian boreal forests, the Eurasian alpine, the Eurasian steppes, the highland Asia, Central Asian steppe, and

Siberia. That is corresponding with the unique location of Mongolia as an ecological transition zone in Central Asia where Siberian taiga forest, Central Asian steppe, the Altai mountains and the Gobi desert meet.

The helminth biodiversity and community in eight populations of Brandt's vole, *Microtus brandti* have been studied and total of 15 species of helminths were recorded. Species richness varied from 3 to 9 (mean 5.87) among different localities and in different sampling year in the same locality. The helminth biodiversity changed among years and correlated negatively with host density. The relative share of caecal nematodes have been decreased following the host decrease in density, while relative share of intestinal, tissue and cavity absorbers increased. The relative density by *Syphacia* spp. and *Catenotaenia afghana* correlated with host density. These species are suggested as reliable bioindicators of the host population.

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### Evaluation of Experimentally Induced Canine Liver Disease and Portal Hemodynamics Using Ultrasonography as a Non Invasive Diagnostic Method

Timothy Mwanza

Laboratory of Veterinary Surgery,  
Department of Veterinary Clinical Sciences,  
Graduate School of Veterinary Medicine,  
Hokkaido University, Sapporo 060-0818, Japan

The liver performs a lot vital of functions in the body. This central role in many anabolic and catabolic processes makes it prone to injury by a wide variety of metabolic, infectious or toxic agents, leading to clinical signs which are at times not specific for the liver. No single laboratory

test is capable of describing the full extent of damage. Diagnosis and the necessary treatment are quite challenging.

The determination of serum concentrations of liver specific enzyme profiles is the most widespread method used. The values however

reflect the status on the day of determination. Radiographs and physical examinations may show signs of an enlarged liver or pain on palpation, but give no information on the progress of the disease processes. A combination of different diagnostic methods is therefore necessary for proper diagnosis and subsequent treatment.

Ultrasound offers the possibility of evaluating abdominal organs like the liver and kidney in a non invasive manner. With the introduction of high quality imaging systems, blood flow and tissue morphology and structure in deep seated organs can be evaluated. Monitoring of both the disease and treatment progress is therefore made possible.

Firstly, a description of the ultrasonographic and angiographic anatomy of the canine hepatic and portal veins in normal dogs was given. The echo structure of the normal liver parenchyma, the hepatic and portal veins were also illustrated. The examination method of the canine liver and suitable positions for transducer placement for hemodynamic measurement was described. Baseline data on portal vein blood flow volume and velocity, the cross sectional area and congestion index were also revealed. This information is essential for the proper interpretation of diagnostic ultrasound images.

Secondly, the diagnostic ability of ultrasonography was evaluated in comparison to liver function test results in a canine model of liver cirrhosis caused by the intravenous injection of dimethylnitrosamine, a liver specific toxin. Typical clinical signs and similar changes in liver

enzyme concentrations that develop in natural canine cirrhosis were observed. Ultrasonographic findings of a coarsened, heterogeneous echo pattern, thickening of the gall bladder wall and increased echogenicity that are characteristic for canine cirrhosis were observed at the same time when the changes in the liver enzyme values became evident.

Finally, the relationship between the results of laboratory and ultrasonographic examinations, especially portal vein blood flow dynamics in experimentally bile duct ligated dogs were evaluated. The main parameters which are known to change during liver cirrhosis, ie, the cross sectional area of the portal vein, the portal blood flow velocity and volume and the congestion index were assessed. Liver parenchyma echogenicity was analysed in relation to changes in liver enzyme levels. Portal blood flow volume and velocity were significantly reduced while a slight increase in the congestion index was noted. Bile duct and gallbladder distention were evident within the 1st week after ligation. The echogenicity of the liver increased in relation to the increase in liver enzyme concentrations.

This study showed that ultrasound in combination with laboratory examinations may be a useful tool in the diagnosis of canine liver diseases. The evaluation of Doppler parameters of portal vein blood flow values in addition to the evaluation of parenchyma changes could contribute to a better non invasive assessment of liver diseases.