DIAGNOSTIC ULTRASOUND IMAGING IN THE DOG FUNDAMENTAL STUDIES AND CLINICAL APPLICATION

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Fundamental studies were carried out to establish diagnostic ultrasound imaging in the dog. The results were summarized as follows:

1) Abdominal organs: Liver and gallbadder were observed by subcostal scanning or scanning of the left and right sides between the 6th to 12th intercostal spaces, and then showed characteristic echo patterns, respectively. The spleen was imaged in the lower intercostal spaces and in the subcostal region on the left side, and exhibited a characteristic low amplitude echo pattern. In each position, the left kindney was observed in the 13th subcostal space and the flank. The right kidney was visualized on the right side between the 9th to 12th intercostal spaces and the 13th subcostal space. Echoes of the kidney were composed of a low amplitude echo pattern showing the renal cortex, an echo free pattern exhibiting the medulla and an echogenic pattern indicating the pelvis. The prostate, observed by scanning from both sides of penis, showed an echogenic area with reduced sharpness at the border.

2) Heart: With two-dimensional echocardiography, scanning regions were the connective pieces between the 3rd to 5th costal teleost and the costal cartilage of the right side. The pulmonary valve and tricuspid valve were imaged on the left side between the 3rd and 4th intercostal spaces. Manipulation of the probe was done readily with a two-dimensional echocardiogram.

3) M-mode echocardiographic parameters were measured more easily in normal dogs. There was no significant difference between the values obstained by the two different methods.

4) Initial image of pregnancy was obtained at 22 day post breeding. In 1 case the fetal heart rate was observed to decrease gradually with the progress of pregnancy.

5) Diagnostic ultrasound imaging contributed to the diagnosis of mitral valve regurgitation, pericardial effusion, diaphragmatic hernia, mass in the bladder, fetus maceration and tumor of the testicles.