

## SONOGRAPHIC WHOLE BODY PARAMETERS OF PORTOSYSTEMIC SHUNTS IN 38 DOGS & CATS

E Lindquist<sup>1</sup>, D Casey<sup>2</sup>, J Frank<sup>1</sup>

<sup>1</sup>SonoPath.com/New Jersey Mobile Associates, Sparta, NJ, USA, <sup>2</sup>SonoPath.com, Sparta, NJ, USA

The purpose of this retrospective study was to develop a reliable set of whole body sonographic positive predictive parameters for diagnosis of porto-systemic shunting. A solitary clinical sonographer experienced in evaluating for portosystemic shunts evaluated the sonograms in 35 dogs and 3 cats. The following sonographic parameters were analyzed: presence of urinary bladder sand/calculi, renal mineralization, renomegaly, microhepatica, portal vein/caudal vena cava ratio (PV/CVC), and portal vein/aorta ratio (PV/AO). Published parameters were utilized to aid in identifying dogs without an EHPSS as those with PV/CVC  $\geq 0.75$  and PV/AO  $\geq 0.8$ . Nineteen cases were surgically confirmed while the remainder were medically managed or lost to follow-up. Twenty-two cases had a bile acid profile performed with a postprandial value ranging from 93-473  $\mu\text{mol/liter}$ . Five dogs had intrahepatic shunts (IHPSS) while 33 patients had extrahepatic portosystemic shunts (EHPSS).

The 5 dogs with **IHPSS** all had normal PV/CVC and PV/AO ratios at the level of the portal hilus. Two/5 dogs with **IHPSS** had bladder calculi/sand, 3/5 had renal mineralization, 2/5 subjective renomegaly, and 5/5 had microhepatica.

Nine/33 **EHPSS** patients were sonographically identified as gastrocaval (GCV), 18/33 splenocaval (SPLCV), and 6/33 splenoazygus (SPLAZ) shunts.

In the 33 patients with **EHPSS**, the PV/CVC ratio ranged from 0.4-0.67 in GCV patients, 0.28-0.75 in SPLCV shunts, and 0.4-0.63 in SPLAZ shunts. The PV/AO ratio ranged from 0.4-0.71 in GCV, 0.4-0.78 in SPLCV, and 0.4-0.68 in SPLAZ shunts.

The following abnormalities were noted: Urinary bladder sand/ calculi: 6/9 GCV, 14/18 SPLCV, 4/6 SPLAZ; renal mineralization: 9/9 GCV, 17/18 SPLCV, 6/6 SPLAZ; renomegaly: 8/9 GCV, 15/18 SPLCV, 6/6 SPLAZ; microhepatica: 9/9 GCV, 18/18 SPLCV, and 6/6 SPLAZ.

In this population of dogs and cats, the presence of urinary bladder sand/calculi, renal mineralization, swollen renal contour, and microhepatica, are reliable, non exclusive, positive predictive factors for the presence of portosystemic shunting but does not distinguish IHPSS from EHPSS. Subnormal PV/CVC and PV/AO ratios are highly reliable indicators of the presence of EHPSS.