

Problems identified by laboratory data and most likely pathogenesis:

1. Leukocytosis, neutrophilia with a left shift, and lymphopenia: This is an inflammatory leukogram (i.e., there is a tissue demand for neutrophils). The lymphopenia indicates systemic stress.
2. Azotemia: Moderate increase in BUN with evidence of adequate urine concentration (specific gravity = 1.027) are compatible with a pre-renal cause of the azotemia. In light of the hyperproteinemia, dehydration is the most likely pathogenesis of the azotemia. A primary renal problem can not be ruled out, but there is no strong evidence for this.
3. Hyperglycemia: Slight increase is probably due to stress with release of endogenous corticosteroids.
4. Hypercholesterolemia: This is a very non-specific finding; however, in this case it is compatible with biliary obstruction.
5. Hyperbilirubinemia due to increased direct-reacting bilirubin: Direct-reacting bilirubin has been conjugated. This pattern is most typical of biliary tract obstruction (either intrahepatic or extrahepatic). In cases of biliary stasis, conjugated bilirubin escapes between hepatocytes or biliary epithelial cells into the lymph and blood.
6. Increased SGPT: SGPT is a tissue-specific enzyme. Increases in SGPT are caused only by hepatocyte damage with sub-

sequent leakage of enzyme. Hepatocellular injury is, therefore, indicated.

7. Increased SAP: Although there are several possible causes of SAP elevations, hyperbilirubinemia and high SGPT activity indicate that the increase in this sample is most likely associated with a hepatobiliary problem. Increased pressure in the biliary tree is thought to induce hepatocyte production of alkaline phosphatase. The enzyme cannot leave the liver through the blocked biliary system and finds its way into the blood.
8. Hyperproteinemia with high normal albumin and globulin: In this case, albumin and globulin are both contributing to the hyperproteinemia. The most likely cause is dehydration (i.e., this is a relative hyperproteinemia).
9. Hyperbilirubinuria: Since conjugated bilirubin is water-soluble, it readily passes the glomerulus and finds its way into the urine. Animals with high serum concentrations of conjugated bilirubin would, therefore, have moderate to high concentrations of bilirubin in the urine.

Conclusions:

This appears to be a case of biliary obstruction with moderate damage to hepatocytes. The tissue demand for neutrophils which is indicated by the leukogram suggests an inflammatory cause of obstruction. Possibilities include cholangiohepatitis, cholecystitis, and cholangitis.

Junior Student Olympic Hopeful

Deanne Davison*

The results of the Boston Marathon last spring may mean Olympic tryouts for Frank Richardson, a junior Vet student at Iowa State. Richardson's time of 2 hours, 16 minutes, 20 seconds placed him 20th in the marathon and ranked him 13th among the

*Ms. Davison is a third year student in the College of Veterinary Medicine, ISU.

American runners in the race, with most of the best runners in the country present. His time at the Boston Marathon was good enough to qualify for the Olympic tryouts.

The Boston Marathon was the second marathon Richardson had trained seriously for, as well as his second exposure to international competition and the outcome was

encouraging enough to give him confidence to compete against the better runners in the country.

Presently, a problem with bursitis in his hip has interfered with Olympic training. If the bursitis clears up by January he still may consider the U.S. Olympic tryouts in Buffalo, New York in May.

Richardson started long distance running as a freshman in high school in Sac City, Iowa. He enjoyed running so much that he continued running year round. Usually he runs 15-20 miles a day except during final exams when he runs 5-10 miles a day. Although running limits the time available for other activities, he said the hardest part was trying to stay awake studying after the day's workout.



Frank Richardson takes a break from classes to train for the Olympic tryouts.



Dr. Brian L. Hill

Dr. Brian L. Hill received the 1979 Norden Distinguished Teacher Award, an award based on nominations by the students. The Norden Award Committee, consisting of past recipients and Chairman Dr. Nani Ghoshal, the 1978 recipient of the award, tallied the votes and made its recommendation to Dean Pearson for final selection. For his selection,

*Ms. Schurr is a second year student in the College of Veterinary Medicine, ISU.

1979 Norden Distinguished Teacher Award

Diane Schurr*

Dr. Hill receives a memorial plaque and a check for \$400 from Norden Laboratories, Lincoln, Nebraska.

Dr. Hill completed an internship and three-year residency in Internal Medicine at Colorado State University ('73-'77), after receiving his Bachelor of Veterinary Science ('68) and DVM ('71) degrees at the University of California in Davis. In July '77 he joined the staff at Iowa State University as an Assistant Professor of Clinical Sciences. In the Clinical Science area he is specializing in small animal gastroenterology.

July 1979 found him heading to Seattle, Washington, where he took the certifying examination for Internal Medicine. Passage of this exam earns Dr. Hill the title of Diplomat of Internal Medicine.

Dr. Hill is married to Dr. Carol Runyon, who is currently a resident here at ISU in Small Animal Surgery. Dr. Runyon is a graduate of Colorado State University, where she received her DVM degree in 1977.