



**San Carlos Veterinary Hospital (SCVH)**  
 8618 Lake Murray Blvd.  
 San Diego, CA 92119  
 (619) 460-3100  
 www.sancarlosvet.com

- Dr. Dean R. Gahring, D.V.M; Diplomate, ACVS
  - Dr. Bruce N. Persky, D.V.M.
  - Dr. Stanley P. Kus, M.S., D.V.M.
  - Dr. Laurel Nishida, D.V.M.
- E-mail: info@sancarlosvet.com

## “Riley Anne” -- Liver, Intestinal Foreign Body & Disseminated Intravascular Coagulopathy (DIC)



"Riley Anne" is a 2 ¼ year old spayed female American Bull Terrier mix. She first presented with a history of vomiting several times the night before. She had been rummaging through the trash.

Plain radiographs did not show any obvious foreign material in the gastrointestinal tract. Her blood tests simply indicated a moderate level of dehydration. She was treated symptomatically and for the dehydration and sent home.

Two days later, Riley Anne re-presented because she again started vomiting. Liquid barium paste was given by mouth and radiographs were taken serially over the next few hours (Figures 1-6).

At 3 ½ hours, most of the barium was still in the stomach and there was abnormal dilation of the upper small intestine (duodenum and proximal jejunum) with the appearance of "accordion pleating" of the intestines. This strongly suggested a foreign body obstruction with string-like material attached that was attached to something in both the stomach and the proximal jejunum.

Based on these findings, Riley Anne was taken to surgery. A 13-inch string foreign body had cut through 6 inches of the duodenum. The damaged duodenum was resected and an end

Figure 1



Figure 2



Figure 3



Figures 1-3:

Note "accordioned" duodenum after 15 minutes and 1 hour, respectively.

Figures 1 and 3 are ventro-dorsal views; Figure 2 is a lateral view.



## “Riley Anne” cont.



-to-end anastomosis was performed and the abdomen was aggressively flushed with warm saline solution. There was serious concern that the bile duct and pancreatic duct openings into the duodenum were either resected or compromised because of the damage to the intestine from the foreign body. Neither opening could be found at surgery.

Riley Anne had an increased clotting time, a significant decrease in the number of platelets (cells that aid the clotting process), decreased PCV (packed cell volume of red blood cells), and decreased total plasma protein. These results suggested she might be showing signs of early [disseminated intravascular coagulopathy](#) (DIC; or "consumptive" coagulopathy). DIC can often be fatal due to excessive bleeding, but can be thwarted with early and aggressive therapy. Two units of plasma were administered to Riley Anne.

Two days after her original surgery, her abdomen appeared to be distending, so a second exploratory surgery was performed. There was no leakage with the anastomotic site, but surfaces appeared to be oozing blood from everywhere, indicating clotting insufficiency. The gall bladder was distended, suggesting that bile was not able to pass from it to the intestine. A cholecystojejunostomy was performed, whereby the gall bladder was opened, the jejunum was opened, and the two openings were sutured together to create a new opening from the gall bladder to the intestine.

Over the next 48 hours Riley Anne appeared jaundiced (icteric), an indication of red blood cell destruction, but her packed red blood cell volume (PCV) held relatively firm in the high 20's (normal is in the low 40's). Riley Anne was on continuous antibiotics during this period. Her amylase and lipase were significantly elevated, indicating concurrent pancreatitis.

\* \* \* \* \*

A summary to this point: Riley had pancreatitis, peritonitis, early signs of DIC, possible loss of functional pancreatic duct into the intestine, an intestinal resection/anastomosis and a cholecystojejunostomy had been performed. She had plasma transfusions. Over the next few days, her PCV's increased slowly to the low 30's, but her icterus persisted. She passed two stools, and then began to eat small portions of chicken. Her serum total proteins were slowly decreasing, likely due to the fact that she hadn't eaten for several days. Then her abdomen began to distend and become tender again, so another exploratory surgery was performed. There was a small area of leakage at the original anastomosis site, which was reinforced. The cholecystojejunostomy site was healing well. Over the next two days, Riley Anne's appetite dramatically improved. A blood test was run that showed that her pancreatic exocrine production of digestive enzymes was apparently normal. Her stools were normal color as well, suggesting that bile was entering the intestinal tract.



Figure 4

Figure 5



Figures 4 & 5: Lateral (top) and ventro-dorsal (middle) views, showing dilated duodenum after 2.5 hours.



Figure 6: Lateral view showing most of the barium is still in the stomach after 3.5 hours.

Five months later Riley Anne was presented for concern about weight loss. She had been gaining weight over the previous 4 months, so the blood test for exocrine pancreatic function was again run, which was now low. The pancreatic duct and opening into the intestine was likely intact, but the pancreatitis probably damaged pancreatic function to the point that insufficient digestive enzymes could be produced. Consequently, oral digestive enzyme pills ([Pancrelipase Tabs](#)) and digestive enzyme powder (Viokase), to be added to her food, were prescribed for Riley Anne. Riley Anne did very well and was on pancreatic enzyme supplements indefinitely.