

Abilene Zoological Gardens

2070 Zoo Lane
Abilene, Texas 79602

325-676-6085

From: Clayton D. Hilton, MS, DVM 
Contract Veterinarian

To: Bill Baker, Director

Date: August 30, 2007

RE: African elephant results

Gross Necropsy

African elephant, 0.1, (SB #29, ISIS #1237), House Name "Tanzy". Postmortem examination of the carcass showed a body condition consistent with an elephant of geriatric status. There were no visible signs of wounds, trauma, or cancer. Gross examination revealed no abnormalities of the eyes, ears, trunk, mouth, heart, or lungs. Approximately 50% of the final set of teeth was present. Abdomen contained abundant fluid, food material, and fibrin. There was an approximate 4 x 3 inch rupture of the GI tract (medial wall of the cecum). There were no other lesions of the GI tract observed during visual examination. Examination of the right knee joint revealed incidental amounts of arthritis.

Histopathology

The lining of the cecum was ulcerated and there were several types of inflammatory cells found in the walls of the cecum. The muscular layer of the cecal wall contained hemorrhage and necrosis. The capsule of the spleen contained hemorrhage and fibrin. Ovaries contained small cysts consistent with advanced age; however, histologic evidence of recent ovulation was present. No histologic abnormalities were identified in the kidney, heart, stomach, eye, peripheral nerve, pancreas, uterus, salivary gland, and trunk.

Histopathologic Diagnoses

Ulcerative and hemorrhagic typhilitis, cecum presumed.
Moderate diffuse subacute fibrinohemorrhagic capsulitis, spleen.

Comments

In light of the above findings, I propose the following as an explanation of Tanzy's demise: The reduced amount of chewing surface of Tanzy's teeth prevented adequate grinding of feedstuffs, which led to an impaction of the cecum. The resulting pressure necrosis of the medial wall of the cecum led to the eventual rupture. The resulting contamination of the abdominal cavity with intestinal contents led to toxic shock and a rapid death.

Please contact me at 325.437.4687 if you have any questions or would like further clarification.



Texas Veterinary Medical Diagnostic Laboratory System



Final Report

P.O. Drawer 3040, College Station, TX 77841-3040
Phone: (979)845-3414 Fax: (979)845-1794 <http://rvmdlweb.tamu.edu/>

(325)676-6085

Owner's Name:
Abilene Zoo

Veterinarian/Submitter: Account ID#: 13826
Abilene Zoological Gardens
2070 ZOO LANE
Abilene, TX 79602

Date specimens received: 8/14/07

Preliminary reports: Fax 8/17/07

Phone reports:

Final report: Fax 8/23/07

Species: Exotic Age: 49.00 Years Animal ID: Tanzy' #1237
Breed: Elephant Weight: Sex: Female

Tests Requested: Bacteriology(Peritoneal swab), stone analysis (gallstone), Histopathology

Specimens Submitted: fixed tissue, gall stone, peritoneal swab

Clinical History: 8/14/07 Animal ill (anorexic) 8/9/07. Treated and responded well. Eating 8/18/07
Returned to normal 8/12/07. Found dead 8/13/07. /ac

Clinical Diagnosis:

Previous Cases:

Treatment:

Conclusion/Interpretation of Lab Findings:

Peritonitis See Histopath. comments.

<i>LABORATORY TEST STATUS:</i>	Ordered	Current Status
Histopath. Necropsy tissues (H)	8/16/07	Completed 8/23/07
Routine culture (B)	8/14/07	Completed 8/17/07
Toxicology Comments (T)	8/14/07	Completed 8/14/07

☪ Histopathology

Histopath: Necropsy tissues Pathologist: Lewis, Barbara
Date completed: 08/23/07
Date report entered: 08/23/07 **Sections/Slides:** 47/25
 Tanzy/ #1237, Exotic # **Tissues:** 23

DESCRIPTION:

LYMPH NODE - The parenchyma is acutely diffusely congested. There is moderate subacute nodular lymphoid hyperplasia.

TUBULAR VISCUS (cecum?) - The mucosa is diffusely ulcerated. The submucosa contains low numbers of lymphocytes, plasma cells, and neutrophils. There is extensive hemorrhage and necrosis in the muscular tunics.

SPLEEN - The parenchyma is acutely diffusely congested with moderate hemosiderosis. The capsule is expanded with hemorrhage and organizing fibrin. **LARGE INTESTINE** - There is surface mucosal autolysis. No microscopic lesions are observed.

TUBULAR VISCUS (large intestine?) - There are multifocal hemorrhages in the serosa.

LUNG - The parenchyma is acutely diffusely congested. There is mild thickening of the lobular interstitium with accumulation of macrophages with phagocytized refractile brown black pigment (pneumoconiosis, incidental finding).

OVARY - There are multifocal cysts lined by cuboidal epithelium. Another section contains a corpus luteum.

TUBULAR VISCUS (Urinary bladder?) - The mucosa is missing. The lamina propria is congested and hemorrhagic.

TRACHEA (respiratory epithelium) - The submucosa is edematous.

SMALL INTESTINE - There is mucosal autolysis. No lesions are observed.

SKELETAL MUSCLE - There are some angular fibers with variation in fiber diameter.

LIVER - The hepatocytes often contain brown granular pigment interpreted as bile.

KIDNEY, HEART, STOMACH, EYE, PERIPHERAL NERVE, PANCREAS, UTERUS?, GLANDULAR TISSUE (Salivary gland?), AND LINEAR TISSUE STRUCTURE LINED BY KERATINIZING STRATIFIED SQUAMOUS EPITHELIUM - No lesions are observed.

HISTOPATHOLOGIC DIAGNOSIS:

Ulcerative and hemorrhagic typhlitis, cecum presumed.

Moderate diffuse subacute fibrinohemorrhagic capsulitis, spleen.

COMMENT:

Histologic identification of some of the tissues was difficult due to loss of the mucosa or lack of architectural relevance. The tissue with the most hemorrhage and necrosis is presumed to be the cecum.

and is consistent with your clinical diagnosis of cecal rupture. Peritonitis is evident on the surface of the spleen. The significance of the NSAID treatment is uncertain. These drugs have been associated with ulcerations in the anterior intestinal tract of many animal species and in the right dorsal colon of horses administered high dosages of phenylbutazone. The clinical significance of the cholelith is undetermined.

Barbara Lewis, DVM, MS, DACVP
/ath

☉Bacteriology

Date completed: 8/17/07

Test: Routine culture

Animal ID: Tanzy/ #1237

Specimen	Isolate	Growth
Peritoneal fluid swab	Mixed anaerobes	
Peritoneal fluid swab	Escherichia coli	
Peritoneal fluid swab	Klebsiella pneumoniae	
Peritoneal fluid swab	Euterobacter sp.	
Peritoneal fluid swab	Mixed bacterial growth	

Comment:

08/16/07

Additional work is in progress.

---A. K. Swinford, DVM, MS, DACVM /ak

08/17/07

Laboratory results as listed. See above for final culture results.

---A. K. Swinford, DVM, MS, DACVM /ak

☼Toxicology

Date Completed: 8/14/07

Toxicology Comments:

Service not offered. Our tests are designed for urinary stones not gall stones. -- Dr. Reagor

Veterinary Bulletin:

Sheep and Goat parasite Antihelmintic Resistance:

Rainfall in Texas has been exceptional for much of the state this year and grass is above normal in most pastures. Unfortunately good rains and good pastures can quickly lead to heavy populations of gastrointestinal parasites. Recently, TVMDL has received several small ruminants (both sheep and goats) for postmortem examination. During the same time period, fecal samples submitted to TVMDL from small ruminants have had high trichostrongyle egg counts. The cause of these recent deaths and rising egg counts can

be attributed solely to *Haemonchus contortus*. Pasture populations of *H. contortus* are markedly elevated now because weather conditions have been perfect for this species.

Unfortunately *H. contortus* has become highly resistant to all classes of anthelmintics. Ivermectin, Moxidectin as well as all of the benzimidazoles appear to have little or no effect at this time. To further compound this problem there are no new drugs in the pipeline which will provide any relief for the *Haemonchus* problem in the near future.

In the mean time sheep and goats, particularly those in small groups should be maintained on the highest and driest areas available and when possible animals should be fed quality feed in bunkers off the ground.

Additional Note: We have had some evidence that Llamas are also a species experiencing severe intestinal parasite problems with apparent resistance to currently used anthelmintics.

TVMDL Fee Increase:

The last increase in fees TVMDL charges for testing occurred in September of 2002. Since that time there have been significant increases in the costs associated with providing testing. Therefore, TVMDL is currently conducting a review of fees charged for testing and we expect an increase to be implemented within the next 30 days. When they are activated, the new fees will be posted on our web site at <http://tvmdlweb.tamu.edu> under the "TESTING" link. Please rest assured that TVMDL is committed to providing you with accurate testing results at an affordable price with as short a "turn around time" as possible.