Tuberculosis in a Rescue Dog from Turkey

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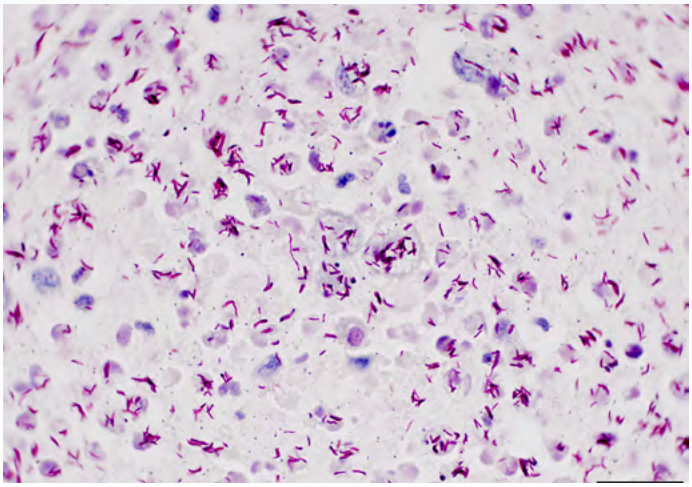
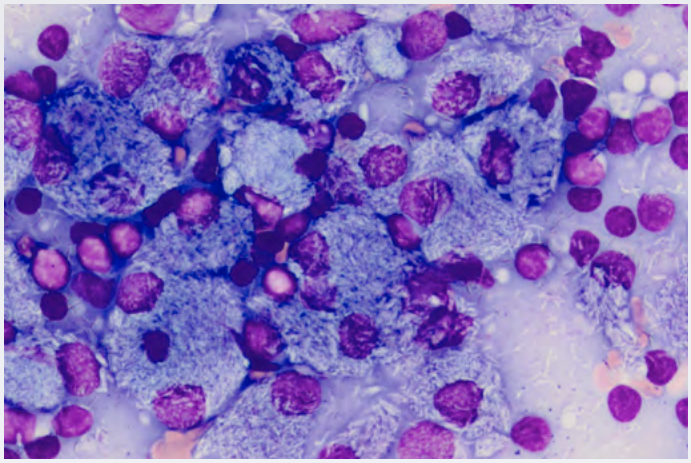
Recently, a rescue dog imported from Turkey was submitted for necropsy to the University of Georgia Athens Veterinary Diagnostic Laboratory with an antemortem diagnosis of chronic hepatitis. PCR of necropsy lesions was positive for mycobacteria, which were subsequently genetically identified as *Mycobacterium bovis*.

Tuberculosis is uncommon in our region. Mycobacterial infections in dogs and cats can be from *Mycobacterium tuberculosis*, which usually infects humans, while *Mycobacterium bovis*, which originates in cattle, infects dogs though cats appear to be resistant. Infections can spread via inhalation or ingestion of bacteria, and clinical signs generally correspond to the route of infection. In dogs, pulmonary infection is more typical while in cats the gastrointestinal presentation is more common. Dogs can present with fever, weight loss, anorexia, and harsh, non-productive coughing, while diarrhea, vomiting, inappetence and weight loss are more typical in cats. Cutaneous lesions may be found in either species. The preferred diagnostic test is PCR of affected tissue, though histopathology can also be suggestive of this disease.

Tuberculosis is one of a number of animal diseases that must be reported to the Georgia State Veterinarian. It is zoonotic, but transmission from people to animals is much more common than the reverse. A list of reportable diseases and contact information for the office of the Georgia State Veterinarian can be found at http://tinyurl.com/he7xxxl



Acid-fast stain confirms mycobacterial organisms on liver histology.



Cytology: Macrophages containing many cytoplasmic non-staining mycobacterial rods, and scattered rods also present in the background on a lymph node aspirate.

With today's global movement of people and animals, we would like to encourage our clients to inquire about the country of origin and travel history of all new patients. Diseases that are absent or rare in North America, such as tuberculosis, may be prevalent elsewhere and pose a potential health risk for the public, your other patients, and your staff. Please ask your clients and provide travel history to your laboratory when submitting samples from animals that have been outside North America.

The only legal requirement for importation of dogs into the United States is rabies vaccination or origin from a rabies-free country. The USDA has information on dog importation at http://tinyurl.com/jqwvdq8.

There are no specific health requirements for the importation of cats, rabbits, sugar gliders, foxes, guinea pigs, hamsters, gerbils, mice, rats, chinchillas, ferrets, or other rodents.

The following reportable diseases are of primary concern:

Rabies: http://www.cdc.gov/rabies/index.html

Tuberculosis: http://www.cdc.gov/tb/

Brucellosis: http://www.cdc.gov/brucellosis/

Anthrax: https://www.cdc.gov/anthrax/index.html

Rift Valley fever: http://www.cdc.gov/vhf/rvf/

Tularemia: http://www.cdc.gov/tularemia/

Q fever: http://www.cdc.gov/qfever/

Leptospirosis: http://www.cdc.gov/leptospirosis/

Leishmania: http://tinyurl.com/ano47nk

Coccidioidomycosis: http://tinyurl.com/lmcbbba

Sporothrix: http://tinyurl.com/hzq6fer

Screwworm: http://tinyurl.com/zv2u5jz and http://tinyurl.com/z8tql6f

Looking for additional information on zoonotic or foreign animal diseases? Suggested resources are listed below.

Centers for Disease Control (CDC): http://www.cdc.gov/DiseasesConditions/

The World Organization for Animal Health: http://tinyurl.com/zomybhu

United States Animal Health Association: http://www.usaha.org/Portals/6/Publications/FAD.pdf

USDA Animal & Plant Health Inspection Service (APHIS): http://tinyurl.com/hqoku6x

Bovine next generation sequencing panel

The **bovine** next generation sequencing panel is able to detect common pathogens associated with bovine respiratory and enteric disease, as well as abortions/ infertility, and mastitis. A list of pathogens is provided below. The panel can detect all of these pathogens in one test but submitting the correct specimen is important for detection. If you are interested in detecting **respiratory disease**, please submit deep nasal swabs, as well as BAL fluid from live animals for a thorough evaluation. If from a dead animal, please submit lung, bronchial LN, and trachea. For **reproductive disorders**, please submit vaginal/uterine swabs (if abortion- include fetus, specifically stomach contents and portions of major organs as well as lymphoid tissue, and placenta). For **enteric cases**, you can submit feces (or parts of colon and small intestine if necropsy case). Milk samples (5 mL) or a sample from the bulk tank (30 mL) can be submitted for **mastitis cases**. Swabs should be dacron (or other synthetic material), not cotton and should have a plastic shaft. Store swabs in a sterile container (ie red top tube). If using a culturette swab, do not place in gel slab, instead, place swab into a sterile container. All samples should be sent to the lab on ice packs by overnight shipping. Discount shipping is available through UPS. Please contact the lab for information. If samples will not be immediately sent to the lab, freeze the samples (except milk) and ship ASAP as described above. **Milk samples** should only be refrigerated and must be sent to the lab within 3 days of collection. **The cost of the test is $175.** *If diagnosing a herd condition, samples from multiple animals can be pooled into a single test.* **Please contact us with any questions (229-386-3340).**

Respiratory Pathogens	Enteric Pathogens	Repro Pathogens	Mastitis
BVDV (with typing)	E. coli toxins (F41, F5, sta, stx 1,2, eae, cnf 1/2, alpha hly)	Neospora	Staphylococcus aureus
other pestiviruses	Salmonella	Leptospirosis species	E. coli toxins
IBR (vs vaccine strain)	Rotavirus (A,B,C)	Toxoplasma	Streptococcus agalactiae
Bovine Coronavirus	Johne's Clostridium	Chlamydia species	Mycoplasma bovis
Mycoplasma species	perfringens toxin typing (alpha, beta, beta2, epsilon, iota, cpe)	Campylobacter fetus fetus and venerealis	Prototheca
Influenza D	Giardia	BHV-4	Streptococcus uberis
PI3	Cryptosporidium	IBR	Streptococcus dysgalactiae
BRSV	Coronavirus	BVDV	Coag negative Staphylococcus
Adenovirus 3		Brucella abortus	Pseudomonas
Histophilus somni		T. foetus	Klebsiella
Pasturella multocida		Bluetongue/EHD	Zygomycetes
Mannheimia haemolytica		Anaplasma marginale	Aspergillus
Trueperella pyogenes		Listeria monocytogenes	Nocardia
Bibersteinia trehalosi		Ureaplasma	