



UC DAVIS

VETERINARY MEDICINE

California Animal Health & Food Safety Laboratory System

PO Box 1770, Davis, CA, 95617

(530) 752-8700

www.cahfs.vetmed.ucdavis.edu

CAHFS Accession #: [REDACTED]

Addendum Version 1

Ref.: [REDACTED]

Coordinator: Katherine D. Watson, DVM, PhD,
Dipl. ACVP

E-Signed and Authorized by: Watson, Katherine
on 2/24/2022 9:29:52PM

Email To:
Baker, Rita L
[REDACTED]

Incident Track:

CAL EXPO RACETRACK
1600 EXPOSITION BLVD,
SACRAMENTO CA 95815
Sacramento County

This report supersedes all previous reports for this case

Date Collected: **Date Received:** 01/15/2022

Comments: 1 carcass

Case Contacts

Submitter	De La Cruz, Eduardo	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Bill To	CALIFORNIA HORSE RACING BOARD	916-263-6000	1010 Hurley Way Suite 300	Sacramento	CA	95825
Owner	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Report To	UZAL, FRANCISCO	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Report To	Baker, Rita L	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Report To	Hill, Ashley	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Attending Vet	De La Cruz, Eduardo	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Trainer	Cisco, Rick	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

CHRB - Related Information

Horse's Name:	[REDACTED]	Human Injury?	No
Tattoo:	[REDACTED]	Death Related to:	Non-Exercise
Age:	14.00 Years	Track Surface:	N/A
Gender:	[REDACTED]	Location on Track:	Barn
Taxonomy:	Horse	Insured?	N

Medications: Azium (Dexamethasone); Banamine (Flunixin); Dormosedan (Detomidine); Euthasol (Euthanasia);

Laboratory Findings/Diagnosis

A 14-year-old [REDACTED] that was euthanized at Cal Expo due to neurologic signs.

GROSS AND HISTOLOGIC DIAGNOSES:

Cause of neurologic signs is undetermined

1. Brain (predominantly grey matter, deep laminar cortex and cerebellum): Multifocal random, acute neuronal satellitosis with acute perivascular edema, neuron necrosis acute, and rare thrombi

Suspect disseminated intravascular coagulation (DIC)

1. Stomach: Multifocal hemorrhage with dystrophic mineralization
2. Intestines: Multifocal hemorrhage
3. Guttural pouches: Bilateral edema and hemorrhage

4. Head: Edema and hemorrhage

INCIDENTAL FINDING

1. Right lateral ventricle: Cholesterol granuloma

Case Summary

02/24/2022:

Case was re-opened by case reporting to change animal's name from [REDACTED] to [REDACTED] per the request of Rita Baker at CHRB.

01/26/2022:

Additional sections of the brain were examined histologically and the slides were reviewed by two neuropathologists. The opinions of the individuals vary on the cause of the changes, but both individuals agree that the microscopic changes are peri-mortem and not likely the cause of the neurologic signs. One neuropathologist is of the opinion that the changes are associated with a microthrombotic event that may be a consequence of euthanasia. The other believes the changes are likely a result of excitatory neuronotoxicity from the seizure activity based on the predominance of the deep laminar cortex involvement. Regardless, the inciting cause of seizures and nystagmus was not evident. This will serve as the final report.

01/20/2022:

Grossly, the brain had loss of definition between the gyri and sulci. Microscopically there were multifocal, random regions of possible edema with necrotic neurons. The brain lesions were shown to a neuropathologist at the CAHFS laboratory due to the confounding nature of the lesions as to a potential cause. The neuropathology specialist requested additional slides to help determine whether the microscopic lesions are true edema or possibly associated with euthanasia artifact. What is evident from the initial slides is that there is a paucity of inflammation within the brain. Additional sections of the brain have been requested. Rule outs for the lesion include thrombus (not in the plane of section), trauma, or euthanasia artifact. Trauma to the head was evident, but suspected to be secondary to the seizure activity due to the lack of subarachnoid hemorrhage at a primary site or on the side opposite from where impact may have occurred (contrecoup). More reports are forthcoming.

01/19/2022 (update):

A majority of the tissues were expanded by hemorrhage without any inflammation suggesting disseminated intravascular coagulation (DIC). Microscopic examination of the brain is still pending are cultures and ancillary molecular diagnostics. Additional reports are forthcoming.

01/19/2022:

The cause of the neurologic signs is currently being investigated. The head trauma is suspected to be secondary to the clinically reported seizures. The cerebral spinal fluid was slightly turbid. Additionally, the mucosa of the guttural pouches was hemorrhagic and the oropharyngeal wall markedly expanded by edema. Puss was not observed in either guttural pouch.

A cholesterol granuloma was present within a non-distended lateral ventricle. The larger cholesterol granulomas produce clinical CNS signs and signs can be variable and progressive. Most, if not all, of the effects of large cholesterol granulomas are caused by blockage of interventricular foramen resulting in development of internal hydrocephalus and progressive degeneration and compression atrophy of the cerebral hemispheres. This was not the case observed here.

Histology and ancillary tests are pending. Additional reports are forthcoming.

Clinical History

Collapse in barn, nystagmus, seizures, mild improvement with treatment. Unable to get up even after five hours of Tx and monitoring, etc.

Date of Death: 01/14/2022. Time of Death: 11:28 p.m.

Agent used for Euthanasia: 100 mL Euthasol.

Gross Observations

A 1125 lbs., 14-year-old [REDACTED] with [REDACTED] (natural) that was euthanized on 01/14/2022 at Cal Expo due to neurologic signs is submitted after hours at the Veterinary Medical Teaching Hospital for necropsy on 01/15/2022. The necropsy is performed at 11:00 AM on the same day after transferring the carcass back to the California Animal Health and Food Safety

Laboratory. The cadaver is in good postmortem condition. The animal has adequate subcutaneous and internal adipose tissue. There is [REDACTED], but there is a microchip on the right side of the neck: [REDACTED]. [REDACTED] The animal is shod on all four limbs with world racing plates on the front and racing plates on the hind limbs. The front shoes have a very low toe grab. The hind shoes have no toe grab. There is a pad on the front shoes. None of the shoes have a rim, hell jar caulk, heel block, or heel sticker.

The peri-ocular region and eyelids are markedly swollen. Expanding the right aspect of the muzzle, right peri-aural region, and peri-ocular region is dark red fluid. The caudodorsal aspect of the lungs have a well-demarcated, dark red discoloration. The stomach contains watery, yellow-green fluid. The rugal folds are variably dark red. Gelatinous red fluid is adhered to the pyloric mucosa with bloody content within the lumen extending into the duodenum. The mucosal surface of the distal jejunum has coalescing regions of linear, dark red discoloration that arborize with petechiae of the surrounding tissue. There is mucoid content within the proximal jejunum and watery green content within the mid to distal jejunum. Formed feces are present within the descending colon. The mucosal surface of the cecum is dark red and dull.

The liver has a nutmeg appearance with radiating tan streaks surrounding the central vein. The spleen is enlarged. The mucosal surface of the guttural pouch is dark red and the oropharyngeal mucosa is expanded by hemorrhage and edema.

The cerebral spinal fluid is watery, yellow, and slightly turbid. The brain has a loss of definition between gyri and sulci. Within the right ventricle is a core of mucin with a granular, yellow cauliflower structure extending from the end.

Bacteriology

Test Specific Comments

Biotyper Organism Identification

Fecal Exam - Modified McMasters

* Fecal McMasters exam is a semi-quantitative estimate of parasite egg numbers which may aid in clinical assessment and treatment decisions. It requires a minimum of 3g to provide accurate results. If <3g of feces is received, Fecal Flotation is performed.

BACTERIAL AEROBIC CULTURE

Animal/Source	Specimen	Specimen Type	Results
[REDACTED]	[REDACTED]	Lung Swab	Escherichia coli Mod#
[REDACTED]	[REDACTED]	Brain Swab	No growth after 48 hours
[REDACTED]	[REDACTED]	Cerebral Spinal Fluid	Enterococcus faecium Rare#

Fecal Exam - Modified McMasters

Animal/Source	Specimen	Specimen Type	Results
[REDACTED]	[REDACTED]	Feces	No parasite eggs detected

Biotechnology

Test Specific Comments

Equine Herpes Virus Multiplex PCR

* NEHV-1 is used as abbreviation to Equine Herpesvirus-1 with the neuropathogenic marker.

Equine Herpes Virus 4, qRT-PCR

Animal/Source	Specimen	Specimen Type	Results
[REDACTED]	[REDACTED]	Lung Tissue	Not Detected
[REDACTED]	[REDACTED]	Spinal Cord Tissue	Not Detected
[REDACTED]	[REDACTED]	Nasal Swab - VTM	Not Detected

Equine Herpes Virus Multiplex PCR

Animal/Source	Specimen Type		Date Resulted	Sp.
[REDACTED]	Lung Tissue		20-Jan-2022	EQ
Analyte	EHV1	NEHV1		
Ref. Range				
Rep. Limit				
Units	Ct	Ct		
Specimen:	Result:	Result:		
[REDACTED]	Negative	Negative		

Equine Herpes Virus Multiplex PCR

Animal/Source	Specimen Type		Date Resulted	Sp.
[REDACTED]	Nasal Swab - VTM		19-Jan-2022	EQ
Analyte	EHV1	NEHV1		
Ref. Range				
Rep. Limit				
Units	Ct	Ct		
Specimen:	Result:	Result:		
[REDACTED]	Negative	Negative		

Equine Herpes Virus Multiplex PCR

Animal/Source	Specimen Type		Date Resulted	Sp.
[REDACTED]	Spinal Cord Tissue		20-Jan-2022	EQ
Analyte	EHV1	NEHV1		
Ref. Range				
Rep. Limit				
Units	Ct	Ct		
Specimen:	Result:	Result:		
[REDACTED]	Negative	Negative		

Histology

Lung, liver, spleen, kidney, intestines, stomach, guttural pouch, and lymph node are examined histologically.

Lung: Alveolar septae are congested.

Liver: Scattered throughout the sinusoids are Kupffer cells that contain coarsely granular dark brown pigment. Scattered hepatocytes contain similar pigment.

Kidney: Vessels throughout are markedly congested or surrounded by hemorrhage.

Stomach: Parietal cells midway between the surface and base are individualized, hypereosinophilic, and surrounded by granular, basophilic material. Vessels throughout are congested. The superficial lamina propria is multifocally expanded by hemorrhage.

Intestines: The lamina propria is multifocally expanded by hemorrhage.

Guttural pouch: The submucosa is expanded by hemorrhage and scattered aggregates of lymphocytes and histiocytes.

Lymph node: The medullary sinuses are distended by hemorrhage.

Brain, brainstem, and spinal cord: Scattered throughout the grey matter are well demarcated regions of vacuolation surrounding variably shrunken, angular and eosinophilic nuclei (frontal, basal nuclei, and occipital). The Purkinje cells within the cerebellum are lifted off of the granular layer with segments that have swollen to shrunken, eosinophilic neurons. Angular dark neurons are present in the hippocampus. Within the basal nuclei region of the brain there are mineralized vessels. Two vessels associated with vacuolization have thrombi. Other vessels have a hypereosinophilic wall. Rarely circulating neutrophils are present in the lumen.

Parasitology

Test Specific Comments

FECAL EXAM - FLOTATION

- * < 10 per slide in a concentration method is consistent with very few eggs present in the sample. >= 10 per slide in a concentration method is consistent with a notable presence of eggs in the sample.
- * Fecal flotation requires at least 1g to provide accurate results. It is a qualitative method that concentrates eggs present in the sample to maximize their detection. A Modified McMasters exam, which requires at least 3 g, is recommended for semi-quantitative information about the number of eggs present per gram of feces, which may aid in clinical assessment and treatment decisions. If <3 g is available, a flotation exam is performed.

FECAL EXAM - FLOTATION

Animal/Source	Specimen	Specimen Type	Results
[REDACTED]	[REDACTED]	Feces	No parasite eggs detected

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[CAHFS Client Feedback Survey](#)

STATE OF CALIFORNIA
CALIFORNIA HORSE RACING BOARD
NECROPSY SUBMISSION FORM
CHRB-72 (Rev. 06/04)

Accession #

LM Path 1-15-22
Vet.

CAHFSL/Davis
W. Health Sciences Dr.
Davis, CA 95616
Phone (530) 752-8709
FAX (530) 752-5680

CAHFSL/San Bernardino
105 W. Central Ave.
San Bernardino, CA 92408
Phone (909) 383-4287
FAX (909) 884-5980

CAHFSL/Tulare
18830 Road 112
Tulare, CA 93274
Phone (559) 688-7543
FAX (559) 686-4231

2022 JAN 15 A 9:33

1125 lbs

Additional necropsy examination(s) that exceed the standard necropsy or equine special necropsy required by and provided through the California Horse Racing Board (CHRB) are the responsibility of the requesting individual (SEE REVERSE SIDE).

When a horse dies or is euthanized and the CHRB Official Veterinarian is not available; the owner's or trainer's attending veterinarian must phone the laboratory within one hour and fax this completed Necropsy Submission Form to the laboratory. A copy of the completed Necropsy Submission Form must be given to the CHRB Official Veterinarian on the Official Veterinarian's next scheduled work day.

Delay of necropsy makes some test results questionable in value. A necropsy will not be performed until the following information has been provided:

Dr. Eduardo De La Cruz
Name of CHRB Official Veterinarian
Track Name: CA Expo
Address: 1600 Exposition Blvd
Sacramento CA
City: [Redacted]
Phone: [Redacted]

[Redacted]
Age (years): 14 yo
Sex: [Redacted]
Castrated: [Redacted]
Tattoo Yes # [Redacted]
Minkie [Redacted]
 No If No, color and markings: _____

[Redacted]
Name of Owner: [Redacted]
City: [Redacted] Code: [Redacted]
Phone: [Redacted]

Dr. David Valcheck / Dr. DeLaCruz
Name of Attending Veterinarian
Address: [Redacted]
City: [Redacted] State: [Redacted] Zip Code: [Redacted]
Phone: [Redacted]
Signature: [Signature]

Rick Cisco
Name of Trainer
Address: [Redacted]
City: [Redacted] State: [Redacted] Zip Code: [Redacted]
Phone: [Redacted]

Mudazolan, Dexmedetomidine, Detomidine, Flunixin, Euthasol
Medications

Track where injury occurred: _____
History: Died Euthanized
Agent used for Euthanasia: 100 ml Euthasol
Location on track where injury occurred (if available): _____
Date of Death: 01/14/2022 Time of Death: 11:28 am

Horse Insured: Yes No Unknown Human Injury: Yes No
Clinical findings and Diagnosis: Collapse in barn, nystagmus, seizures, mild improvement with treatment. Unable to get up even after Shors & Tap & monitoring, etc.

Additional Requests: _____
The injury is related to one of the following: Running of the race Training Non-exercise related Other
Signature of CHRB Official Veterinarian: [Signature] Date: 01/14/2022