

Final Report AHC Case: 14-5856

Last Updated: 09/29/16 1:52 PM
Pathologist: Stephen Raverty, DVM
Received Date: 12/08/14
Collected Date: 12/08/14
Client Ref No: Fetus of J32

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Animal Data
Species: Killer Whale
Breed:
Sex:
Age: Fetus
Premise ID:

Case History

Submitted one adult Killer Whale fetus for post mortem.

From Vancouver Island, posted December 6, 2014

Fetus from J32

Final Diagnosis

MORPHOLOGIC DIAGNOSES:

- 1). Fetus and uterus: Fetal malposition, loss and decomposition with multifocal fibrinosuppurative endometritis, focal endometrial perforation, fibrinopurulent exudate, segmental compression, impaction and focal annular ulceration of the adjoining colonic segment, regional lymphadenopathy and marked splenomegaly (Gross diagnosis)
- 2). Lung: Aspiration, pigmented squames, mild, multifocal, random with scattered inflated alveoli and terminal bronchi
- 3). Placenta: Meconium, moderate, multifocal with variable accumulation of edema fluid
- 4). Small intestine and mesentery: Fibrosis, serosal, moderate, laminar with multifocal subserosal edema and superficial fibrinoserous exudate
- 5). Small intestine and glandular and nonglandular stomach: Microcavitations, submucosal, moderate, multifocal to coalescing
- 6). Skin: Microcavitations, dermal and hypodermal, moderate, multifocal to coalescing with diffuse vascular stasis
- 7). Skin: Edema, hypodermal, moderate, diffuse, acute
- 8). Skin: Dermatitis, superficial, perivascular, mild, multifocal, suppurative

There are no significant lesions within the peripheral nerves, spleen, fetal membranes, pancreas, thyroid gland, colon, esophagus, ovary, fallopian tube, uterus, liver, rib, tongue, skin, blubber, peripheral vasculature, umbilicus, heart or kidney.

COMMENTS:

Post mortem decomposition and bacterial overgrowth significantly hampered microscopic review of the sectioned tissues and precluded determining a specific cause of fetal death. The head first fetal presentation is consistent with malposition

or breach and the lack of fetal folds along either side of the torso suggests that the fetus may not have assumed a normal ventrolateral curved orientation through the later stages of gestation (peduncle bend with flukes positioned ventral to the torso). The malposition and possible apposition of the blowhole to the endometrium within the lower reproductive tract may have impeded aspiration of meconium and squames. The maceration and amputation of the rostral third of the snout may be due to partial protrusion of the snout through the vagina and exposure to water or retrograde bacterial invasion, colonization of the exposed tissue and proliferation. This was likely an agonal or post mortem process. The state of putrefaction is significantly more advanced than J32 and it is likely that the fetus succumbed in utero and with persistent maternal contractions of the uterus, perforated the endometrium, provided a portal for microbial invasion and resulted in secondary septicemia. In J32, there was focal colonic impaction cranial to the rectum, which may also be related to extrinsic compression of the colon by the fetal rostrum. In segments of the intestine, there is expansion of the serosa due to fibrous connective tissue with subserosal edema fluid and fibrinoserous exudate suggestive of localized peritonitis. Superficial perivascular suppurative dermatitis was apparent in more intact regions of the skin and suggestive of an acute process. Otherwise, there was no other indication of an infectious or inflammatory process. Close evaluation of multiple sections of lung disclosed small numbers of widely dispersed squamous epithelia with small punctate deposits of meconium; these changes are suggestive, but not confirmatory of a fetal distress type syndrome. There are a small number of inflated airways, possibly related to gas evolution due to putrefaction and in areas, the bronchial lumina and occasional alveolar spaces are distended and occluded by exfoliated respiratory epithelia. Aerobic culture of harvested tissues yielded a few to heavy growth of *Edwardsiella tarda* with highest levels of recovery from the umbilicus, fetal membranes, small intestine and colon. However, the degree of autolysis and lack of conclusive inflammatory infiltrate suggests post mortem overgrowth rather than a primary pathogen. Special culture did not isolate any *Salmonella* spp, *Yersinia* spp or fungi. Molecular studies proved negative for canine distemper virus, West Nile virus, Apicomplexa and *Brucella*. Special stains of the endometrium revealed large numbers of Gram positive cocci with fewer bacilli in the inflammatory exudate and scattered Gram negative rods within the subendometrium. Case consultation with Expert Review Panel, August 23, 2016.

Necropsy

For the gross report and comments, please refer to case 14-5855.

Histopathology

Please refer to Morphologic Diagnoses.

Bacteriology

Aerobic Culture - Prod Resulted by: Jaime Osei-Appiah Verified by: Erin Zabek on 12/11/14 @ 12:50 PM

Specimen	ID	Isolate	Result	Level
Lung		<i>Edwardsiella tarda</i>	Positive	few
Spleen		<i>Edwardsiella tarda</i>	Positive	1+
Ovary		<i>Edwardsiella tarda</i>	Positive	4+
Tissue	umbilical	<i>Edwardsiella tarda</i>	Positive	4+
Tissue	fetal membrane	<i>Edwardsiella tarda</i>	Positive	4+
Small Intestine		<i>Edwardsiella tarda</i>	Positive	4+
Colon		<i>Edwardsiella tarda</i>	Positive	4+

Culture - Yersinia Resulted by: Jaime Osei-Appiah Verified by: Erin Zabek on 12/11/14 @ 12:50 PM

Specimen	ID	Isolate	Result	Level
Colon			No <i>Yersinia</i> sp. Isolated	

Culture - Fungal Resulted by: Jaime Osei-Appiah Verified by: Erin Zabek on 12/18/14 @ 10:15 AM

Specimen	ID	Isolate	Result	Level
Tissue	fetal membrane		No Fungi Isolated	

Culture - Salmonella Resulted by: Jaime Osei-Appiah Verified by: Erin Zabek on 12/11/14 @ 12:50 PM

Specimen	ID	Isolate	Result	Level
Small Intestine			No Salmonella sp. Isolated	
Colon			No Salmonella sp. Isolated	

GNEG Resulted by: Jaime Osei-Appiah Verified by: Erin Zabek on 12/11/14 @ 12:50 PM

	Organism
Antibiotics	Edwardsiella tarda
Enrofloxacin	s
Ceftiofur	s
Gentamicin	s
Neomycin	s
Ampicillin-Sulbactam	s
Sulphamethoxazole/Trimethoprim	s
Tetracycline	s
Florfenicol	s

Antibiotic Sensitivity legend: enr = Enrofloxacin, xnl = Excenel, cn = Gentamicin, bneo = Neomycin, sam = Ampicillin-Sulbactam, sxt = Sulfamethoxazole/Trimethoprim, tet = Tetracycline, ffc = Florfenicol

Molecular Diagnostics

Apicomplexa Resulted by: A Scouras Verified by: Tomy Joseph on 12/10/14 @ 3:50 PM

Specimen	ID	Test	Result
Tissue	lv,hrt,tong,dia,sk.musc	Apicomplexa	Negative

Test validation in progress.

Brucella spp. Resulted by: Julie Bidulka Verified by: Tomy Joseph on 12/12/14 @ 8:30 AM

Specimen	ID	Test	Result
Tissue	Ig,ln,sp,kd,lv	Brucella spp.	Negative

Test validation in progress.

Canine Distemper virus Resulted by: A Scouras Verified by: Tomy Joseph on 12/10/14 @ 3:50 PM

Specimen	ID	Test	Result
Tissue	Ig,ln,sp,kd,lv	Canine Distemper virus	Negative

West Nile virus Resulted by: A Scouras Verified by: Tomy Joseph on 12/10/14 @ 11:43 AM

Specimen	ID	Test	Result
Tissue	Ig,ln,sp,kd,lv	West Nile virus	Negative

Staff Comments:

Toxicology testing performed by Prairie Diagnostic Services (see attached report).



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These results relate only to the animals or items tested.

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