



LABORATORY REPORT

Submission No: S2024/06_0015

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State Vet Area: SV Malmesbury

Purpose of sampling: Diagnostic

SPECIMEN INFORMATION

Species: Canine - Dog
Date & Time Received: 2024-06-03 11:35am

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POST MORTEM REPORT

Date: 03/06/2024

Submission number: S2024/06_0015

Animal identification: Black and white Pitbull cross female - Sader

History: "Post mortem of canine and testing pellet for any poison." Form on bag indicated the carcass was received by the SPCA on 24/05/2024 and it was assumed frozen for the time period before post mortem on 03/06/2024.

Samples received and tests requested: One female, spayed, black and white adult Pitbull cross presented for post mortem examination.

PM changes: Moderate to advanced autolysis.

General changes:

Large number of fleas observed on the hair coat.

Body condition 2/5 (ribs prominent, but still adequate visceral fat reserves).

Specific changes:

Severe splenomegaly (1.1 kg), with a meaty consistency and pale red/pink colour. Bulging on cut surface, but not able to ascertain whether there was specifically white- or red pulp hyperplasia, due to autolytic changes. Mild, multifocal petechial haemorrhages on the capsular surface.

Moderate hepatomegaly, with pale brown colour (autolysis vs cellular swelling vs cellular infiltrate - histopathology pending).

Area around muzzle wet (may indicate ante-mortem vomiting/regurgitation?)

Mild, linear erosions in the distal 2/3 of the oesophageal mucosa (potential chronic vomiting?)

Intestinal tract completely empty - only a small amount of pink mucus in the stomach, bile staining in the duodenum and no content in the rest of the small intestine and colon. No faeces present in rectum. Large numbers of whipworms (*Trichuris* sp.) observed within the caecum (likely incidental).

Hard approximately 2 x 2 cm hard mass in the dermis/subcutis of the right caudal abdominal mammary/teat region (second to last nipple) - suspected neoplasia

Single soft, almost pedunculated subcutaneous or dermal mass dorsolateral and to the left of the anus.

Samples taken at necropsy: Organ pool of samples for histopathology. Stomach content and submitted pellet for pesticide screening (external laboratory).

RESULTS:

Blood smears: Multiple blood smears were attempted, with blood variably thick and difficult to smear. Even though intact erythrocytes were observed, mild- to moderate numbers of naked nuclei were also present (likely indicating mild leucocytosis). As these cells were not intact it was not possible to identify the cell types. Numerous post mortem bacteria were also present.

Spleen and liver impression smears: These organs were variably autolysed and smears made did not contain any intact cells that could be identified to aid in diagnostics.

Histopathology:

Spleen: The spleen was markedly autolysed, making it difficult to evaluate the cellular population and characteristics. However, the major cell population expanding the splenic parenchyma consisted of densely cellular, suspected neoplastic, large round cells (no nuclear or cytoplasmic detail distinguishable), intermixed with scattered smaller round

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cells with dark basophilic round nuclei (likely the "normal" lymphocytic population).

Bone marrow: Highly cellular, with the predominant population consisting of intermediate to large neoplastic round cells, with moderate amounts of eosinophilic cytoplasm and clear cytoplasmic borders. Nuclei were round, but no chromatin detail was observed due to autolysis of these cells. The intermixed cell population consisted of the normal islands of granulopoietic precursors and scattered megakaryocytes.

Lungs: Many of the medium and small blood vessels were expanded by similar intermediate- to large round neoplastic cells with moderate amount of cytoplasm and round- to indented nuclei. Similar neoplastic cells were also observed within alveolar capillaries.

All liver samples were too autolysed for meaningful histological examination.

Duodenum: The periphery of the ulcer revealed marked neutrophilic inflammation in the submucosa and smooth muscle wall directly adjacent to the perforating ulcer. The mucosa was necrotic in this region. Mild, localised inflammatory infiltrates were also observed on the intact adjacent serosa (mild, localised peritonitis). Some of the blood vessels in the duodenal wall in the surrounding region were also filled with the neoplastic round cells, similar to that observed in the lungs.

Skin mass in mammary region: An infiltrative, relatively densely cellular, relatively well demarcated, but unencapsulated mass consisting of round cells was present in the dermis, with a small grenz zone between the neoplasm and the epidermis. Where it was possible to be observed (least autolysed regions), neoplastic cells were round, with scant to moderate amounts of eosinophilic cytoplasm and often eccentric round nuclei. Occasionally larger cells with pleomorphic nuclei and karyomegaly were observed. Mitotic count was difficult to determine due to autolysis of many of the cells, but some high power fields had up to 5 mitoses. [Round cell neoplasm - suspected cutaneous plasmacytoma]

Skin mass in perineal region: A similar plasmacytoid round cell infiltrate was observed in the superficial dermis. Within the deeper dermis, there was a collection of lakes of amorphous material surrounded and intermixed with small numbers of similar plasmacytoid cells, and histomorphologically normal lymphocytes, and occasional plasma cells and neutrophils.

COMMENTS/DIAGNOSIS:

Diagnosis: Suspected lymphoproliferative neoplasm, complicated by acute, focal duodenal ulceration.

The most significant finding in this animal was the extensive proliferation of neoplastic round cells (suspected lymphoid origin) in the spleen, bone marrow and vasculature. Due to moderate autolysis, some of the cellular features were not easily identifiable and further classification is not possible without further immunohistochemical staining.

Three lymph nodes were examined histologically, but did not show evidence of neoplasia. Presence of neoplastic cells in the bone marrow, spleen and blood may indicate either a primary lymphoma in the spleen, spreading to the bone marrow and blood (leukaemic lymphoma), or a primary leukaemia, spreading to the spleen (lymphoid leukaemia). In either case, this animal may have been clinically ill and showed signs like vomiting and inappetence (which was evident on the post mortem as well). Poor body condition due to muscle atrophy can also be attributed to the neoplastic condition.

This animal also had a perforated duodenal ulcer. This alone may result in death, and may indeed be the cause of the sudden, unexpected death. Causes of duodenal ulceration include prolonged use of anti-inflammatory medication, stress and even traumatic perforation by sharp intestinal content. No such sharp content could be observed in the intestines in this case. If there is no history of recent anti-inflammatory use, this ulcer was likely stress-associated.

There was evidence of potential ante-mortem vomiting and an empty intestinal tract. Both duodenal ulceration as well as lymphoproliferative neoplasia would have resulted in this animal not feeling well and therefore not eating and vomiting. Did the owners notice any behavioural changes or changes in appetite?

The two skin masses evaluated are likely unrelated to the main systemic lymphoproliferative neoplasia. It was difficult to specifically identify the cells and pathological processes for these two masses. However, the mass in the mammary region was most likely a benign cutaneous plasmacytoma. The mass in the perineal region may have also been a

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cutaneous plasmacytoma (considering the plasmacytoid proliferation closer to the epidermis). However, it may also have been a previously ruptured anal sac gland with inspissated amorphous material admixed with chronic inflammatory cells. These may be considered incidental findings in this case.

Even though vomiting can be seen with organophosphate poisonings, there was no additional indications of this. There also was no evidence of severe bleeding tendency (as would have been caused by anticoagulant rodenticides), or mineralisation in organs (as expected with vitamin D-analogue rodenticides). This reduces the likelihood for poisoning by the most commonly used poisons.

However, some of the mucus that was present in the stomach was collected and that, as well as the pellet, was sent for pesticide screening at V&M Analytical Toxicology Laboratory Services (Pty) Ltd.

I have not received the results for the pesticide screening back yet (as of 31/07/2024) due to non-payment and therefore these results are not included in the final report.

Thank you for submitting these samples to the Western Cape Provincial Veterinary Laboratory. Please do not hesitate to contact us should you have any queries.

State Veterinarian

Dr A Avenant

Name

Signature

