

CASE REPORT

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## Alimentary Lymphoma In A Cat

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### Abstract

Lymphoma is the most common feline malignant tumor, and the alimentary form is the most common seen form. Alimentary form in the cat typically involves lesions of the small intestine, stomach, mesenteric lymph nodes, and liver. The disease is often reported in cats between 1 and 20 (mean 13 years) years. A 3-year-old domestic male cat was admitted to Uludağ University Animal Hospital due to chronic weight loss, loss of appetite, diarrhea and vomiting traced back to 15 days. Abdominal ultrasonography was performed and a large solid mass was spotted in the cranial abdomen. During the treatment, the cat developed respiratory stress, shock and died 2 days after. In light of the clinical symptoms, ultrasonography, necropsy and histopathological findings; small-cell-alimentary lymphoma was diagnosed for the 3-year-old cat. It can be interpreted that small cell (lymphocytic) alimentary lymphoma is seen rarely in younger cats and seldom exceeds itself from gastrointestinal tract compared to large-cell lymphoma.

Key words: alimentary, lymphoma, cat

### Case Report

Lymphoma is one of the most common malignant tumors identified in cats and alimentary lymphoma is the most common form of the disease. The disease is often reported in cats between 1 and 20 (mean 13 years) years (Louwerens et al., 2005). Alimentary lymphoma in the cats typically causes lesions in the small intestine, stomach, mesenteric lymph nodes and liver (Hittmair et al., 2000). Alimentary lymphoma has been reported to be lymphocytic (small cell, low-grade) or lymphoblastic (large cell, high grade) lymphoma in cats (Richter, 2003). In small cell lymphoma, there is a chronic weight loss with a slow occurrence process (Carreras et al., 2003; Hayes, 2006). Thickened bowel segments which are described to be 'rope-like' and other intraabdominal masses can be detected on routine clinical examinations.

Additionally, mesenteric lymph nodes can grow to be palpable (Hayes, 2006). Weight loss and lethargy can be the only clinical findings observed in cats. In these cats, gastrointestinal symptoms such as vomiting and diarrhea can develop acutely without any previous clinical signs (Vail, 2007). It is reported that lesions may be focal or diffuse, as small-cell lymphoma typically limits itself to the gastrointestinal system (Wilson, 2008). In large cell lymphoma lesions in spleen, peripheral lymph nodes, thoracic lymph nodes and bone marrow can develop concurrently with the lesions in alimentary system (Vail, 2007). Large cell alimentary lymphoma often has more severe and acute symptoms such as anorexia, lethargy and diarrhea (Mahony et al., 1995; Kiselow et al., 2008). Our case was a 3-year-old, domestic breed male cat brought to Uludag University Animal Hospital Internal Diseases Clinic with the symptoms of loss of appetite,

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diarrhea and chronic weight loss for the last 15 days. In physical examination, dehydration, enlargement of both popliteal lymph nodes and pale mucous membranes were noted. In addition, abdominal palpation revealed a bulk with moderate hardness. After routine clinical examination of the cat, serum and EDTA blood samples were taken for routine hemogram [total leukocyte (WBC), hematocrit (HCT), hemoglobin (HGB), erythrocyte indices (RBC, MCV, MCHC) and platelet counts (PLT)] and for some (urea, creatinine and ALT) serum biochemical analysis. Hematologic examination revealed neutrophilic leukocytosis. Mild anemia with thrombocytopenia was also noted. ALT (52.3 U / L), CREA (1.07 mg / dL) and UREA (43,4 mg / dL) values were found to be within the normal reference ranges.

Ventrodorsal and lateral abdominal radiographs that were taken for radiological examination revealed abundant radiopacity with severe detail loss and the presence of radiolucent gas within colon transversus (Figure 1). In addition, lateral radiographs showed circular radiolucent areas in the ventral vein of the colon transversus. These areas were considered as intestinal contents.



Figure 1. Ventro-dorsal radiography shows radiopaque loss of details and radiolucent gas formation in colon transversus

Real-time abdominal ultrasonography revealed no abdominal free fluid that might be consistent with radiological appearance. In the cranial part of the abdomen, a solid structure with definite, walled and homogeneous echogenicity was detected. A serous part of an intestinal segment was found to be in contact with this structure (Figure 2).

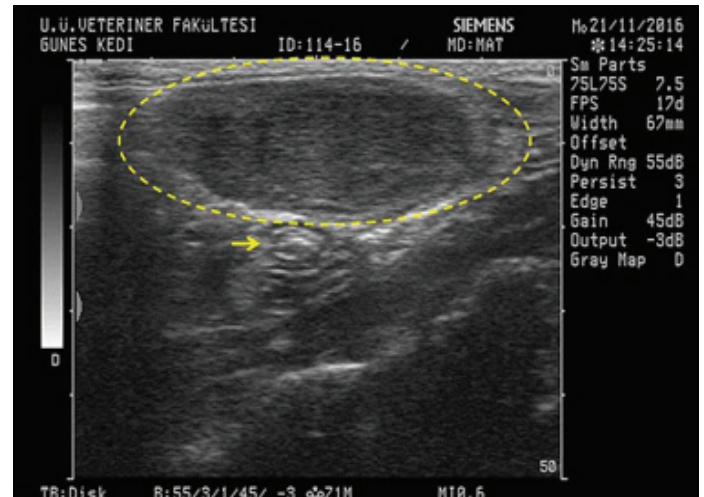


Figure 2. Solid mass with an homogenous echogenicity that was spotted on cranial abdomen (oval) and intestinal loop that is integrated with the mass (arrow)

On postmortem examination, in addition to the hyperemic and edematous appearance of the intestines. It was noticed that the intestinal walls thickened and contained dark brown coloured and blood-stained contents in the lumen. On the macroscopic examination, it was observed that the mesenteric lymph nodes were enlarged, and the largest was about 6x3x3 cm and had medium-hard consistency (Figure 3). On the subcapsular surface of liver, the presence of foci of light yellow color to varying ranges detected. A mass with a pale yellow color with a diameter of approximately 1.5 cm was detected on the left diaphragmatic lobe of the lung.



Figure 3. Enlargement of the mesenteric lymph node

On the histopathological examination, neoplastic cell infiltrates with multifocal distribution in the portal area and in the parenchyma in the liver, as well as the formation of fibrous tissue that is rich in collagen specks in the neoplastic tissue were observed (Figure 4). Also, neoplastic cell proliferations were observed in the submucosal lymphatic follicles along with neoplastic lymphoid cell infiltrates (lymphocytes, lymphoblasts, plasma cells) observed in lamina propria and submucosa in the small intestine (Figure 5).

In addition, moderate mononuclear cell infiltrations were detected in lamina propria and submucosa. In the mesenteric lymph gland, an increase of fibrous tissue together with diffuse neoplastic cell infiltrates were detected. Similar infiltrations and fibrotic changes were also found in the subpleural area of the lung. These findings concluded neoplastic formations were metastasized to various organs and lymph nodes.

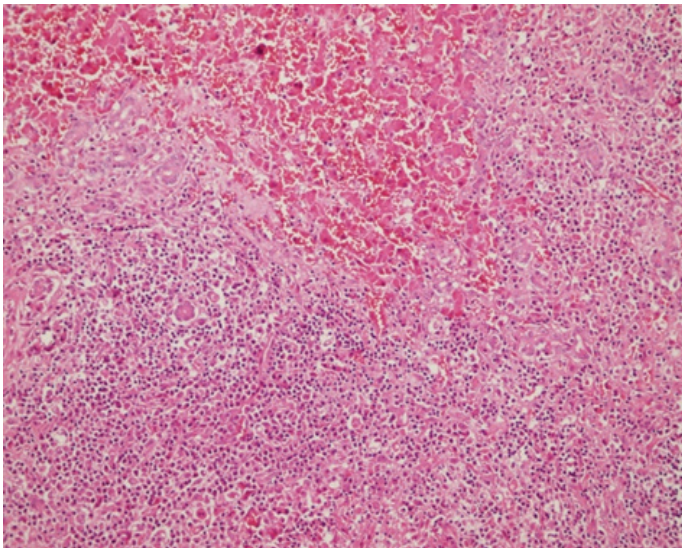


Figure 4. Neoplastic lymphoid cell infiltration in the liver, Hematoxylin and eosin, 200x.

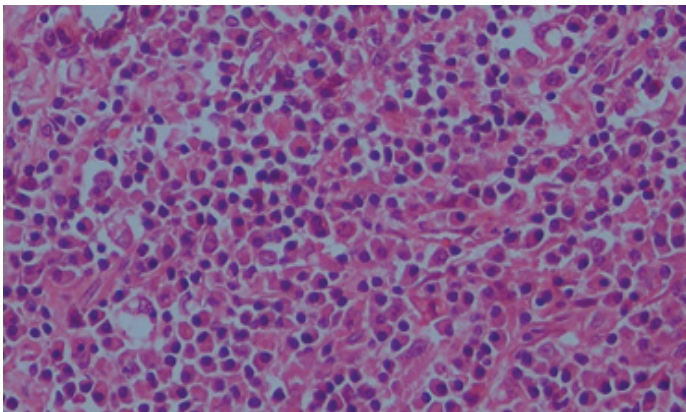


Figure 5. Neoplastic lymphocyte, lymphoblast and plasma cell infiltrations, Hematoxylin and eosin, 400x.

Alimentary lymphoma in cats must be taken in to account when chronic weight loss, anorexia, gastrointestinal problems in the past and intestinal masses in abdominal palpation detected. The information given by the patient's owner indicated that the cat had lost about 1 kilogram in weight in 15 days. In the detailed diagnosis of the disease, the presence of anemia and neutrophilia are the most common alterations in hematological findings (Fondacaro et al., 1999; Gabor et al., 2000). Hematologic examination revealed neutrophilic leukocytosis and mild anemia with thrombocytopenia. It is thought that the neutrophilic

leukocytosis is associated with secondary bacterial infections, also anemia may have been a result of gastrointestinal bleeding which was detected in necropsy examination. Serum biochemical results did not indicate any liver or kidney failure at the time of the measurements. Thickening of the intestinal walls on the ultrasonographic examination can also be attributed to alimentary lymphoma (Richter, 2003; Gieger, 2011). A suspicious mass is detected in the ultrasonographic examination of 90% of the cats with alimentary lymphoma (Grooters et al., 1994; Hittmair et al., 2000). In our case, the presence of solid mass detected by abdominal palpation on clinical examination was confirmed by ultrasonographic examination. The presence of a solid mass (Figure 2) detected on cranial abdomen by ultrasound examination shows compatibility with the macroscopic findings obtained from the necropsy. In addition, the histopathological examination of sections of enlarged mesenteric lymph nodes, sections of the small intestine mucosa, liver and lungs, and presence of neoplastic cells that are mainly lymphocytic and plasmacytic character supports the diagnosis of lymphocytic alimentary lymphoma. Lymphocytic lymphoma is more commonly seen in geriatric cats and appears to restrict itself to the gastrointestinal tract (Wilson, 2008). In our case, neoplastic formations exceeded the gastrointestinal tract and metastasized to especially the liver and lung.

In a retrospective study of 67 cases with diagnosed alimentary lymphoma, 74% of the cases were reported to be in lymphocytic (small cell) form (Mahony et al., 1995). Large-cell (lymphoblastic) lymphoma of the alimentary tract has been reported to be more frequent in elderly and male cats (Wilson, 2008).

In light of the clinical symptoms, ultrasonography, necropsy and histopathological findings; small-cell-alimentary lymphoma was diagnosed for the 3-year-old cat. It can be interpreted that small cell (lymphocytic) alimentary lymphoma is rarely seen in younger cats and seldom exceeds itself from gastrointestinal tract compared to large-cell (lymphoblastic) lymphoma.

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