**Liposarcoma in an Old Cat**

Tadashi TANIMOTO, Kinji SHIROYA, Masuo NAKAMURA, Yumi UNE, and Yasuo NOMURA

Department of Veterinary Pathology, School of Veterinary Medicine, Azabu University, Sagamihara, Kanagawa 229, and Sennawa Veterinary Clinic, Chofu, Tokyo 182, Japan

(Received 12 January 1987/Accepted 26 March 1987)

---


**KEY WORDS:** cat, liposarcoma, myofibroblast.

Liposarcoma is fairly common in man [2], but is rare in domestic animals [8].

A 9-year-old, male, Japanese cat had a seed-sized, firm, movable mass at the subcutis of distal left antebrachium. At 13 years of age, the cat was admitted to a veterinary clinic because the tumor began to grow rapidly and infiltrated extensively into surrounding tissue. Amputation was made, but immediate recurrence and widely spread metastasis occurred in the subcutis, lymph nodes, tongue, heart, lung, anterior mediastinum, and pleura (Fig. 1). The cat was gradually emaciated, lost weight, and died of dyspnea due to severe hydrothorax and pulmonary edema. Macroscopically solid multinodular tumor invaded irregularly into normal tissue. The cut-surface of the tumor was yellowish white and lobulated.

Microscopically, most of the neoplastic tissues were cellular and had some necrotic areas. Some groups of the neoplastic cells were irregularly separated by thin fibrous septa, invading into adjacent tissue. Angiogenesis in the neoplastic tissue was low. Pleomorphic tumor cells with indistinct cell border had a bizarre, hyperchromatic nucleus with a large basophilic nucleolus (Fig. 2). The cytoplasm was eosinophilic, finely granular or sometimes univacuolated. There were a small number of sudanophilic cytoplasmic granules in most neoplastic cells (Fig. 3). Mitotic figures were small in number.

Ultrastructurally, most of the neoplastic cells had several lipid droplets without limited membranes, some mitochondria, small vesicles and sparse or occasionally integrated 10nm-filaments in the cytoplasm (Fig. 4). The neoplastic cells were loosely interdigitated by their cytoplasmic processes each other and surrounded partially by external laminae. Myofibroblasts with filaments and distinct dense bodies were frequently encountered between the neoplastic cells (Fig. 5).

---

**Fig. 1.** Severe hydrothorax and pulmonary edema. Tumor metastasis in the heart (asterisk), lung (asterisk), anterior mediastinum (arrow), and pleura (arrowheads).

**Fig. 2.** Tumor from the subcutis of left antebrachium. Neoplastic cells have bizarre, hyperchromatic nuclei. Epon embedded, toluidin blue stain. ×360.

**Fig. 3.** Sudanophilic cytoplasmic granules in the neoplastic cells. Sudan III stain. ×180.
C-type virus particles in the neoplasm. FeLV antigen was not examined.

Liposarcoma is supposed to arise from primitive mesenchymal cells rather than mature adipose tissue [2, 3]. In this case, light and ultrastructural appearances of the tumor cells were similar to undifferentiated mesenchymal cells or lipoblasts rather than lipocytes, and were slightly different from the liposarcoma cells in man [2, 3, 6] and the dog [1].

The myofibroblast is supposed to be modified fibroblast and is frequently observed in several neoplasms including liposarcoma [5, 9]. We could not observe transitional form between the myofibroblast and liposarcoma cell in this case.

REFERENCES


Fig. 4. Several small lipid droplets in the cytoplasm of the neoplastic cells. Bar=1 μm.

Fig. 5. Myofibroblast with dense bodies (arrowheads) between the neoplastic cells. Bar=2 μm.

In cats, there are few reports of liposarcoma including the feline leukemia virus (FeLV)-associated cases [4, 7]. We could not observe

要約

ネコの脂肪肉腫の1例（短報）：谷本忠司・代田欣二・中村満州雄11・宇根ユミ・野村靖夫（麻布大学獣医学部病理学教室，11仙川病理科医院）—13歳の猫に脂肪肉腫を認めた。左前腕遠位部に存在した小腫瘤であったが、4年後に突然急速な増悪がおこり、転移が認められた。腫瘍細胞は多形性で、細胞質にズラン顆粒を認めた。超微細構造的的に髄界線のない脂肪滴が見られた。腫瘍細胞間には、筋線維芽細胞を認めた。