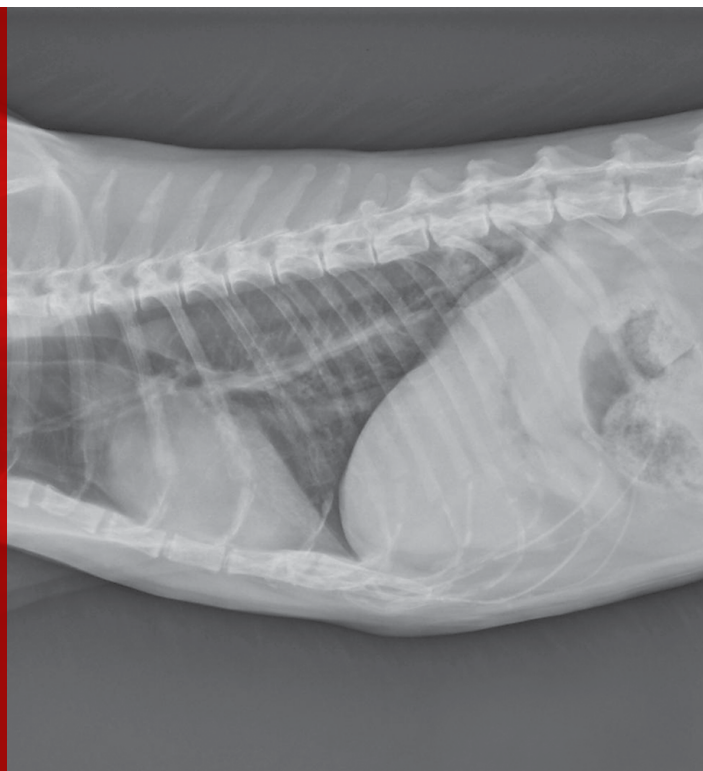


Pulmonary Neoplasia & Digital Metastasis in Cats

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YOU HAVE ASKED ...

What do I need to know about primary lung cancer and digital metastasis in cats?

THE EXPERT SAYS ...

Primary Lung Tumors & Metastasis

Primary lung cancer in domestic cats is rare, with <1% of all cancers diagnosed in cats¹; however, metastatic cancer of the lungs is more common.² No incidence data have been reported.

Reported primary lung tumors (*Figures 1 and 2*, next page) include squamous cell carcinoma and sarcoma, but adenocarcinomas are reportedly the most common histopathologic diagnosis.² Adenocarcinomas are subcharacterized by location

(ie, bronchial, bronchioloalveolar, alveolar) and grade. Carcinomas are graded on histopathology as differentiated or undifferentiated, with the grade directly correlating with metastatic incidence.^{1,3} Although most primary carcinomas are localized and solitary at diagnosis,^{1,4} the literature suggests that >50% of undifferentiated carcinomas and 90% of squamous cell carcinomas metastasize,^{1,3} with one study reporting ≈75% of feline lung tumors as metastatic.⁴ Metastasis to the lungs, skin, CNS, and digits may occur transpleurally, hematogenously, or via lymphatics or airways.^{1,3,4}

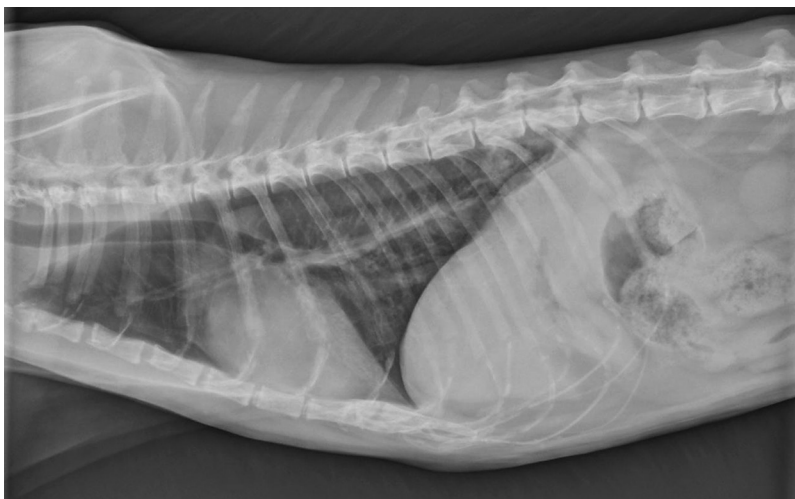
Feline Lung-Digit Syndrome

Feline lung-digit syndrome, a syndrome of multiple digital metastasis, is characterized by disseminated metastasis to the digits and is most commonly associated with bronchial and bronchioloalveolar

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carcinomas.^{1,3,5,6} This pattern of metastasis is most frequently diagnosed in older cats (mean age, 12 years; range, 2-20 years⁵), with no consistently reported breed or sex predilection.^{1,3-6} The patho-

genesis is not well-understood; metastatic lesions are believed to arise via arterial embolization from the tumor.^{5,6} Tumor metastases are located at atypical sites, most notably the distal phalanges (**Figure 3**), with the weight-bearing third phalanx of the front feet most frequently affected.⁶ In addition, multidigit and multilimb involvement are common.^{6,7}



▲ **FIGURE 1** Lateral thoracic radiograph of a 14.5-year-old male domestic cat with a caudal dorsal cavity primary lung mass. Image courtesy of Rachel Moon, DVM, DACVR



▲ **FIGURE 2** Dorsoventral radiograph of right-sided caudal primary lung tumor. Image courtesy of Rachel Moon, DVM, DACVR



▲ **FIGURE 3** Dorsoventral radiograph revealing lytic lesions associated with distal phalanges consistent with digital metastasis. Image courtesy of Rachel Moon, DVM, DACVR

Clinical Examination

Patients may be presented with a history of nonweight-bearing lameness; a painful, firm swelling on the toe; purulent inflammation; and erythema associated with the digit and nail bed.^{1,4} This clinical presentation is more similar to inflammatory pododermatitis than to a neoplastic condition,⁵ and histopathology may be needed to make an accurate diagnosis.

Radiographs may reveal extensive osteolysis of the distal phalanx that may cross the joint space. Thoracic radiographs often show a single primary lung mass, although diffuse nodular disease has also been noted.¹ No clinical signs of respiratory distress in affected cats have been reported.⁶

Treatment & Prognosis

Treatment for lung-digit syndrome is considered palliative, and prognosis is poor. In one study, the median disease-free interval was 24 days, and median survival time was 104 days.⁷ Another study reported a mean survival time of 58 days after presentation.⁸

Excision of the affected digit may help alleviate pain and discomfort; however, microscopic metastasis to other digits or locations are likely already present,^{4,5} limiting the effectiveness of this approach beyond that of palliation. Resectioning the primary lung tumor

will not improve the condition of the digits; the mainstay of palliative and/or hospice therapy for affected cats consists of analgesia, supportive care, or radiation therapy with palliative intent.^{1,4,5} NSAIDs (eg, piroxicam 0.3 mg/kg PO q24h⁹) may be beneficial because of their analgesic and anti-inflammatory effects, as well as their cyclooxygenase-2 related antiangiogenic effects, which may slow disease progression.¹⁰ When using NSAIDs, renal, hepatic, and GI function should be closely monitored to avoid toxicity issues. Buprenorphine, a partial μ -agonist (0.01-0.02 mg/kg PO q8-12h), or tramadol (1-2 mg/kg PO q12h) may also have palliative benefits.¹¹ There are no reports in the veterinary literature of chemotherapy's efficacy in the management of this syndrome.

Conclusion

Digital metastasis is a rare and painful syndrome that occurs secondary to primary lung tumors in cats. Prognosis is typically poor. Therapy should be aimed at controlling pain. ■■■

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