

# IMMUNOHISTOCHEMICAL CHARACTERIZATION OF A MALIGNANT PERIPHERAL NERVE SHEATH TUMOR IN A DOG.

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**Introduction:** Malignant peripheral nerve sheath tumors (MPNSTs) are spindle cell sarcomas with poorly understood histopathologic features and clinical behavior in veterinary medicine. This report describes the aggressive and unusual biological behavior of an intermediate grade MPNST in a dog.

**Case description:** An 8-year-old dog was presented for a recurring spindle cell sarcoma on the left thigh one month after excision. No evidence of metastasis was found on total body CT-scan. Complete excision by coxofemoral disarticulation was performed. Unexpectedly, a mass was noticed in the left hemipelvis 3 months post-amputation. CT-scan showed enlarged inguinal and iliac lymphadenopathy and a parasternal nodule compatible with metastasis. Left hemipelvectomy with lymph nodes and nodule excision was performed. Histopathologic diagnosis was intermediate grade spindle cell sarcoma with clean margins. Adjuvant doxorubicin and metronomic chemotherapy were started. Fifteen days postoperatively, CT-scan revealed subcutaneous, muscular, paravertebral, intra-abdominal and splenic nodules cytologically compatible with soft tissue sarcoma (STS). Microscopically, the primary mass was a spindle cell sarcoma of low to moderate cellular density with crisscrossing beams of variable size organization. The mitotic activity was 4 mitoses per 10 hpf but Ki67 index was high. Immunohistochemically, the tumor was positive for vimentin, S-100, NSE and sporadically for actin. CD31, VIII factor, CD117, desmin, PNL2, EMA and pancytokeratin were negative. These findings led to a diagnosis of intermediate grade MPNST.

**Conclusions:** This report of an intermediate grade MPNST exhibiting early metastases after radical surgeries and adjuvant chemotherapy emphasizes the need for preoperative immunohistochemistry on STS in dogs in order to recommend appropriate management and overall prognosis.