What Is Your Diagnosis?

History

A 12-year-old neutered male Miniature Schnauzer was evaluated for lameness of the right hind limb of 3 months' duration. There was no history of previous trauma. Gait analysis revealed a weight-bearing lameness of the right hind limb localized to the stifle joint. Physical examination revealed a large, firm cranial tibial muscle. The dog did not have signs of pain when the muscle was palpated. Radiographs of the right stifle joint were obtained (Fig 1).

Determine whether additional imaging studies are required, or make your diagnosis from Figure 1—then turn the page.

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The authors thank Drs. M. Broome and D. Hager for assistance.
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Diagnosis

Radiographic diagnosis—Increased soft tissue opacity within the right femorotibial joint (Fig 2).

Comments

Magnetic resonance imaging revealed a fusiform, enhancing soft tissue mass along the lateral aspect of both the right femorotibial and the femoropatellar joint, extending along the long digital extensor tendon with bony erosion of the lateral femoral condyle at the origin of the long digital extensor tendon (Fig 3 and 4).

Differential diagnoses for a soft tissue mass extending across the synovial joint included synovial cell sarcoma, fibrosarcoma, hemangiopericytoma, rhabdomyosarcoma, and tumors of the nerve sheath. A fine-needle aspirate was performed, and the sample was submitted for cytologic evaluation, which revealed several small stellate- to spindle-type cells arranged in sheets and short bundles with occasional areas of palisading and moderate mitotic activity. A preliminary diagnosis of synovial cell sarcoma of both the right femorotibial and femoropatellar joints was made on the basis of extension of the tumor across the synovial joint, lack of lysis or proliferation of surrounding bone, and results of cytologic examination. Amputation of the right hind limb was recommended to achieve complete excision of the tumor. In addition, adjunctive chemotherapy was recommended because of the high rate of metastasis.1,2

Midfemoral amputation was performed, and complete surgical excision of the tumor was achieved. Examination of the right stifle joint revealed a large, lobulated, opalescent white mass that encompassed the joint capsule of both the femoropatellar and femorotibial joints and extended down the tibial musculature and long digital extensor tendon. Histologic examination of the mass revealed pleomorphic, polygonal, and spindle cells in solid sheets with some palisades and partial whorls. The cells had scant to moderate eosinophilic cytoplasm, large vesicular nuclei and ≥ 1 prominent nucleoli, and high mitotic activity. Adjunctive chemotherapy was administered (carboplatin at 300 mg/m², IV, q 3 wk for 5 treatments). The dog is reportedly doing well.

Synovial cell sarcomas are rare in animals; most cases have been reported in dogs. Synovial cell sarcomas occur mainly in large-breed dogs with no breed predisposition.1,2 Males may be slightly more predisposed to developing these tumors than females.3 The age of affected dogs ranges from 12 months to 15 years.1 Typically, lameness with a palpable mass located near a joint or tendon with or without signs of pain is identified on physical examination. Synovial cell sarcomas are slow growing initially and suddenly increase in size over a few weeks. Metastatic disease and local recurrence are common even after complete excision.1,2