History

A 6-month-old sexually intact male Border Collie was admitted for evaluation of mild intermittent left forelimb lameness that the owners had noticed 3 times since they adopted the dog at 2 months of age. Episodes of lameness lasted 4 to 5 days, and lameness resolved in response to administration of nonsteroidal anti-inflammatory agents.

The only abnormality detected during physical and orthopedic examinations was a mild left forelimb lameness. Signs of pain or discomfort were not elicited on palpation of the affected limb. Results of CBC and serum biochemical analyses were within reference ranges. Radiographs of the left shoulder were obtained (Fig 1).

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

Radiographic diagnosis—A lobular, periarticular, mineralized soft-tissue opacity in the region of the subscapularis muscle (Fig 2).

Comments

The soft-tissue density did not extend into the left shoulder joint. Radiographs of the contralateral shoulder were obtained, and a smaller but similar area of lobular periarticular mineralization was identified in the region of the right subscapularis muscle. Differential diagnoses included synovial chondrometaplasia or a neoplastic process, but because of the radiographic abnormalities and history, our presumptive diagnosis was tumoral calcinosis. The mineralized tissue and a portion of the adjacent left subscapularis muscle were excised. Grossly, the excised portion of muscle was mottled with chalky white and gritty particles of mineral-dense material. Results of histologic examination confirmed our initial diagnosis of tumoral calcinosis.

Tumoral calcinosis is a pathologic condition in which ectopic mineralized material develops periarticularly.1–3 Although a rare diagnosis in dogs, tumoral calcinosis has been reported most commonly in German Shepherd Dogs < 2 years old.1 The tarsometatarsal, phalangeal, elbow, and cervical regions are the most commonly affected sites.1

Establishing a diagnosis of tumoral calcinosis solely on the basis of radiography can be difficult because of the wide range of possible radiographic abnormalities. Similar lesions can be seen in dogs with synovial chondrometaplasia (synovial osteochondromatosis),4 however, synovial chondrometaplasia is characterized by the formation of osteochondral nodules within synovial tissue, whereas tumoral calcinosis is solely a periarticular disease. Histologic examination of the periarticular deposits is important for obtaining a definitive diagnosis.

The etiopathogenesis of tumoral calcinosis in humans and other animals is obscure. Hyperphosphatemia may play a role, and an autosomal recessive pattern of inheritance is suspected in humans.5 Trauma has also been suggested as a cause of tumoral calcinosis, but in animals in which the disease develops bilaterally, trauma is an unlikely cause. Although excision is the treatment of choice, recurrence is possible. In humans, a diet low in calcium and phosphorus with concurrent administration of phosphate-binding antacids may be beneficial to slow progression and help prevent recurrence of disease.6 However, treatment with steroids or phenylbutazone and radiation therapy have proven unsuccessful.3

The dog described in this report required no further treatment with analgesics once the lesion was excised from the left subscapularis muscle. We did not excise the lesion in the right subscapularis muscle, because this lesion was not associated with abnormal clinical signs. Ten months after surgery, lameness had not recurred, and the dog remained free of clinical signs of tumoral calcinosis.

Figure 2—Same radiographic views as those depicted in Figure 1. Notice the lobular, periarticular, mineralized soft-tissue density (arrows) medial to the shoulder joint in the region of the subscapularis muscle.


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