

# What's Your Radiographic Diagnosis?

E A Riedesel, DVM\*

## History

An 11 month old male German Shepherd was presented to the Iowa State University Veterinary Teaching Hospital with a history of intermittent lameness of the left front leg. The first episode of lameness had occurred two months previously. Treatment with anti-inflammatory drugs had temporarily controlled the lameness. However, the lameness returned when the medications were discontinued. The dog was being fed a growth diet. Vaccinations were complete.

The physical examination revealed a partial weight bearing lameness of the left front limb. Mild to moderate pain was elicited by deep palpation of the radius along its length. Temperature, pulse, and respiratory rate were normal.

A radiographic evaluation of the left radius and ulna was done (fig. 1).

## Radiographic Signs

Areas of increased opacity of the medullary cavity of the radius and ulna are identified. In the distal one-half of the radius there are four focal opacities. Each has a fairly distinct margin, and normal medullary opacity surrounds each lesion. In the proximal radius and adjacent region of the ulna, the lesion is more diffuse in nature. In this area, a loss of the normal distinction between the cortical and medullary opacities can be seen. Structures comprising the elbow and carpal joints are normal.

## Radiographic Diagnosis

Panosteitis of the left radius and ulna.

## Discussion

Panosteitis is an inflammatory disease of unknown etiology of the long bones.<sup>1,2</sup> It occurs most commonly in young, large breed dogs. German Shepherds have the highest reported incidence of this disease. Males are more frequently affected than females at a ratio of 80% to 20% respectively.<sup>1</sup> The bones most commonly affected are the humerus, radius, ulna, femur, and tibia. The age of onset is generally between 5 and 12 months, but can be seen in dogs as old as 7 years.

The classical clinical presentation is that of an acute onset of lameness unrelated to trauma. The lameness may spontaneously resolve only to be apparent later in either the same or a different limb. Thus an intermittent, shifting leg lameness may be the clinical history. Physical examination of the limb typically reveals pain on deep palpation of the affected bone. Pain may be perceived with manipulation of joints caused by referred pain due to the proximity of the long bone lesion to the joint.

Radiography provides the diagnostic evidence of this disease. The radiographic changes seen are areas of increased medullary opacity. These may be focal, discrete areas or a more diffuse involvement. Often when the lesion is diffuse, a mild, smooth periosteal new bone reaction is present. Differential diagnoses for this signalment and clinical history would include osteochondrosis and elbow dysplasia (united anconeal process and fragmented coronoid process) for frontleg involvement, and hip dysplasia for hindleg involvement. Radiography can be successfully used to differentiate these diseases. However, more than one of these diseases have been seen concurrently in the same dog.

Panosteitis is a self-limiting disease. Treatment is symptomatic and directed at relief of pain. Non-steroidal anti-inflammatory medication, more specifically buffered aspirin, will usually be sufficient. Restriction of exercise may be beneficial. The prognosis is excellent.

\*Dr. Riedesel is an associate professor of clinical sciences in the College of Veterinary Medicine at Iowa State University.

Return to normal activity will usually occur within several weeks to several months. Signs may, however, reoccur in a different bone.

### References

1. Newton, CD and Biery, DN. In: *Textbook of*

*Veterinary Internal Medicine.* ed. Stephen J. Ettinger, WB Saunders. p. 2391. 1989.

2. Halliwell, WH. In: *Pathophysiology in Small Animal Surgery.* ed. M. Joseph Bojrab, Lea and Febiger. p. 716-717. 1981.



BMC

Fig.1 Medial-lateral projection of the left radius and ulna of an 11 month old,male, German Shepherd.