What is Your Diagnosis
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Signalment
A 4-month-old male American Pit Bull.

History
The dog had been presented with lameness of all four limbs regardless of history of trauma. Severe pain and ataxia had been first noticed; forelimbs in particular, then slowly improved during the last 2 weeks. However, marked swelling surround the distal part of both forelimbs remained.

Clinical Examination
Hard textured presentation of the swelling area was detected via palpation. The dog had a slight fever. Blood examination showed mild leukocytosis.

Radiographic Examination
Mediolateral and dorsopalmar radiographs from distal aspects of both radius and ulna were taken to assess the radiographic changes of bones and soft tissue.

Figure 1, 2. Mediolateral radiographs of the right (1) and left (2) distal aspects of the radius and the ulna.

Figure 3, 4. Dorsopalmar radiographs of the right (3) and left (4) distal aspects of the radius and the ulna.
Radiographic findings

All radiographs revealed transverse irregular radiolucent lines running from the proximal to the distal physis in the metaphyseal regions of both radius and ulna (Figures 1-6). Thickening of the metaphysis that was due to severe periosteal reaction and soft tissue swelling could be detected (Figures 1-6). Periosteal bone formation was found close to the distal physis of the left radius (Figures 4, 6).

Radiographic diagnosis

Hypertrophic osteodystrophy (late stage)

Discussion

Hypertrophic osteodystrophy or metaphyseal osteopathy is a developmental bone disease that is usually diagnosed by using radiographic examination. It is a self-limiting disease of unknown etiology that frequently affects large and giant breed dogs between two and seven months of age. Dogs usually recover after two to three weeks regardless of treatment. Cases that present severe involvement of bone reaction in the physis can result in premature physeal closure, subsequently develop bilateral valgus deformities in the mid and distal forelimbs.

In order to evaluate the developmental bone disease, a comparison should be made between two dimensions of orthogonal radiography and contralateral limb examination. If the lameness cannot be localized to a specific region of the limb, several radiographs of the limb should be consider.

References
