Incomplete ossification of the humeral condyle (IOHC) in a 10 month old male Labrador.

History: A 6-month- old male Labrador Retriever was admitted with an intermittent lameness of the right foreleg for the last two weeks. The lameness worsened after exercise and did not improve with rest. On clinical examination, a right foreleg lameness was observed and elbow extension appeared to be painful. Although on presentation not currently lame on the left leg, the dog reacted on extension of left elbow.

CT findings: Characteristic findings consisted of a saw-toothed intercondylar hypoattenuating defect (described as saw-tooth) bordered by hyperattenuating bone (sclerosis) which is typical for an Incomplete ossification of the humeral condyle (IOHC).

Figure 1: Transverse- (left) and dorsal reconstructed (right) CT images of the right elbow in bone window. The fissure line through the distal humerus is clearly visible on the images as a translucent line surrounded with irregular, sclerotic edges (orange arrows).
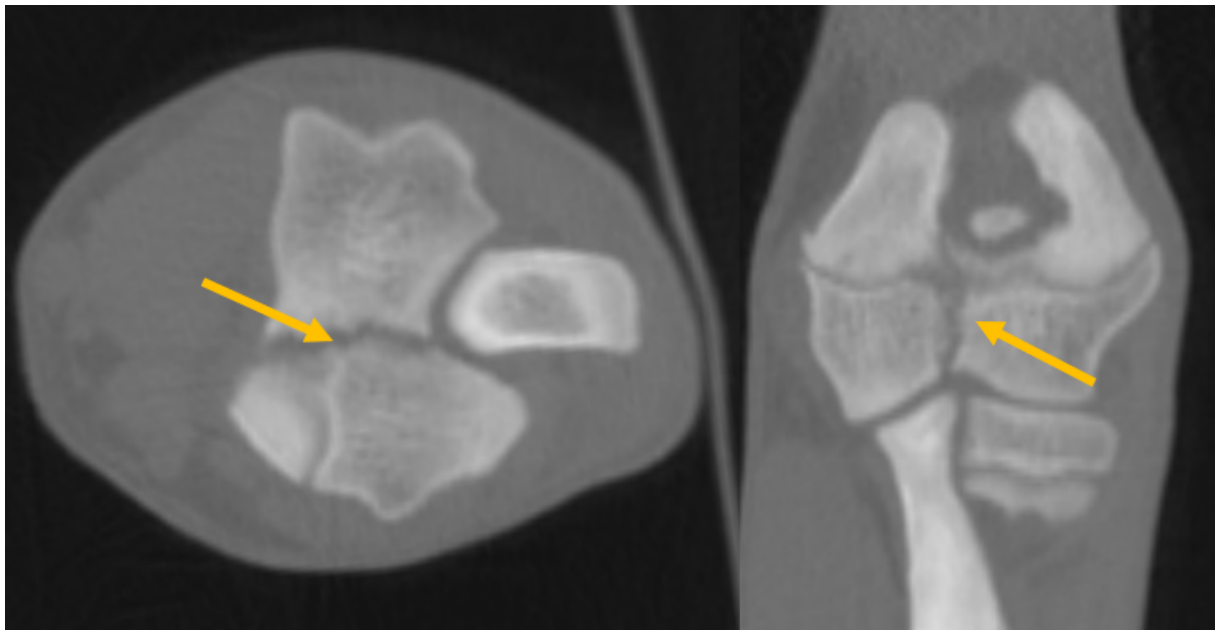
Figure 2: Transverse- (left) and dorsal reconstructed (right) CT images of the left elbow in bone window. The fissure line between the humeral condyles on the left elbow is wider than on the right one (orange arrows).
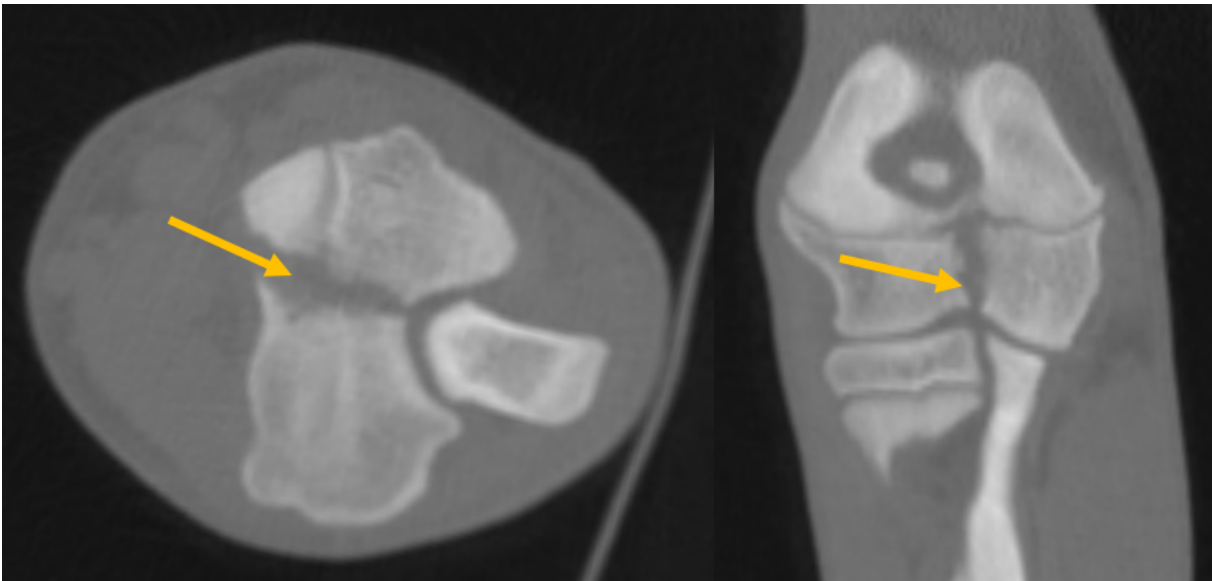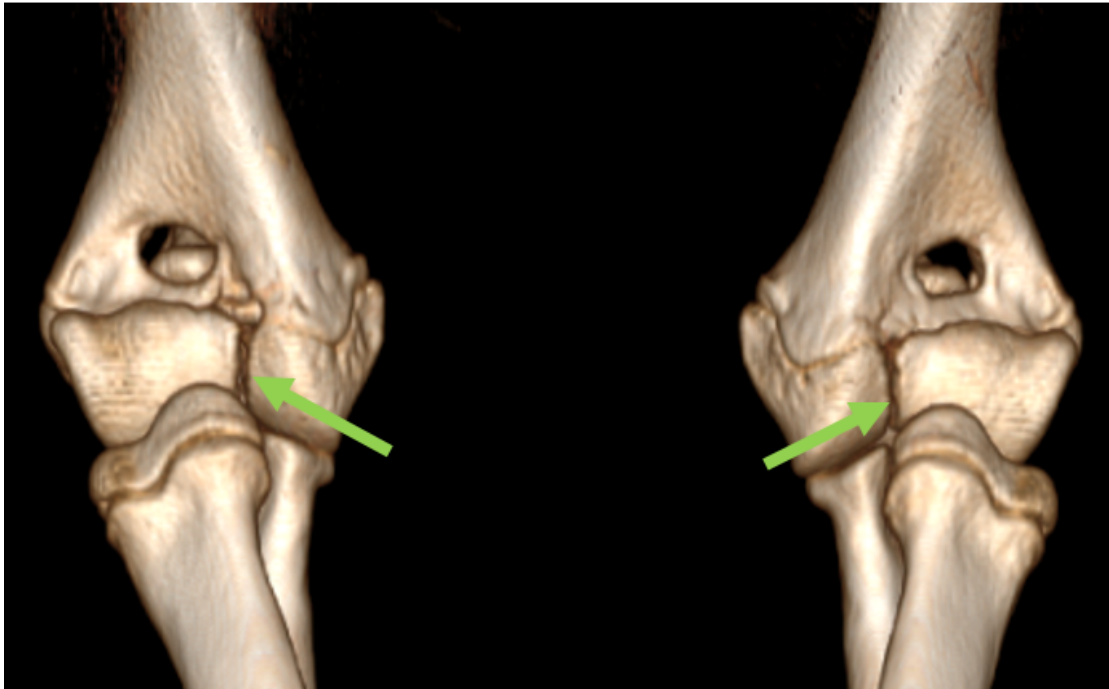

Figure 3: 3D CT images from the left (left) and the right (right) elbow show clearly the IOHC lesion (green arrows).

Breeds predisposed to IOHC include the spaniel breeds. Other reported breeds include the German Shepherd Dog, Yorkshire Terrier, Tibetan Mastiff, Rottweiler, English Pointer, Siberian Husky, and Labrador Retriever.

Incomplete ossification of the humeral condyle (IOHC) has been reported as an uncommon cause of forelimb lameness in dogs. It is characterized by an intercondylar fissure located where the intercondylar physis is present in growing dogs. Such fissures weaken the humeral condyle and thus IOHC predisposes affected dogs to complete condylar fractures.

IOHC may also cause clinical signs of lameness and elbow pain in its own without complete fracture.