

6th CT-User Meeting

Joint venture:

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Department of Medical Imaging & Small Animal
Orthopaedics; Faculty of Veterinary Medicine
GHENT UNIVERSITY
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Theme:

Contrast Agents and Applications in Computed Tomography

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Proceedings

033 P09 Agreement between radiography and computed tomography for medial coronoid disease in the screening of 424 canine elbow joints

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Screening of canine population for inherited conditions such as hip and elbow dysplasia is today a common practice, that has improved the general health of canine population. Medial coronoid disease (MCD) is the most frequently diagnosed component of elbow dysplasia. Diagnostic imaging is essential to assess the lame patient; screening and the diagnosis of elbow dysplasia rely essentially on radiographic grading of joints; however computed tomography (CT) has been suggested as the preferred noninvasive technique to assess MCD lesions of the canine elbow joint. The aim of this study was to determine the sensitivity and specificity of radiography for the assessment of MCD in a population destined for screening using CT as reference; and to compare these values to those presented in previous publications.

Data of canine patients part of a screening for hip and elbow dysplasia between January 2011 and March 2016 were collected from the database of the Department of Veterinary Medical Imaging and Small Animal Orthopaedics of the Ghent University. Inclusion criteria were bilateral radiographic and CT assessment of the elbow joints. A random blinded scoring was performed by two experienced observers in consensus for each patient using CT images and three standard radiographic views (lateral extension, lateral flexion and a 15° oblique cranio-medial caudo-lateral). Joints were scored as normal when an unaltered MCP was observed in the radiographic and CT assessments. Radiographs and CT images were scored as positive for MCD if changes of the outline, shape, radio-density attenuation, fragmentation or fissure line of the medial coronoid process were found. Sensitivity and specificity were calculated for the radiographic assessment whereas CT was considered to be the test of reference. The evaluation of the 424 elbow joints, resulted in a radiographic sensitivity of 65% and specificity of 93%. Other studies that compared radiography to CT assessment of the elbow joint obtained higher values of sensitivity and specificity (77-97% sensitivity and 100% specificity), however this high values come from smaller populations of lame dogs. This is the first study that investigates and compares these two imaging modalities in a large population destined for screening of elbow dysplasia.