

Computed Tomography Assessment in Experimentally Induced Avascular Necrosis of the Femoral Head in Dogs

Sun-Hee Bae, Kum-Jung Moon, Tae-Kyung Byun, Jong-Hoon Jeon, Yun-Sang Seong, Ki-dong Eom¹, Jae-Hoon Kim², Kwang-Ho Jang*

College of Veterinary Medicine Kyungpook National University,

¹*College of Veterinary Medicine Konkuk University,*

²*Department of Veterinary Medicine Jeju National University*

Introduction: This study was performed to assess avascular necrosis(AVN) of the femoral head in the dog with the computed tomography(CT)

Material and methods: AVN was experimentally induced in a litter of 7 dogs. Dogs were evaluated with radiography, CT, contrast CT every week from 7th day to 70th day post-operation. Histopathologic examination was performed on 92th day post-operation.

Result: On CT scan, diffuse porotic lesion and focal sclerotic lesion were detected on 14 ± 0 th day and on 21 ± 0 th day post-operation, respectively. Subchondral fracture, articular collapse and crescent sign with decreased attenuation were shown on 28th day post-operation for the first time and no change of the sign are detected from 49th day to 70th day post-operation. Focal porotic lesion and irregular radiopacity of the femoral head were detected on 41 ± 7.48 th day and on 51 ± 5.29 th day post-operation respectively on radiographs. According to radiographic staging system of the osteonecrosis developed by Ficat, CT scans showed stage 0, stage II, and stage III on 7 ± 0 th day, on 14 ± 0 th day, and on 28th day post-op. for the first time, and radiographs did stage 0 and stage II on 7th day and on 35th day post-op. first respectively.

Clinical relevance: This study has shown that CT is more suitable for early diagnosis of AVN in femoral head and has superior sensitivity than radiography. Also, CT has been expected to be important for staging and treatment of AVN.

* Corresponding author: khojang@knu.ac.kr