

## Editorial

# Limb Posture of Dogs with Medial Patellar Luxation

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The four grades of medial patellar luxation and the associated bone deformities recognized by clinical examination, radiology and computed tomography have been extensively described. Some of these bone deformities include shallow femoral trochlea, distal femoral varus, proximal tibial varus and abnormal hip conformation. Currently the surgical procedures intended to correct these deformities include various osteotomies. However, recent computed tomographic studies suggest that toy breed dogs with grade two medial patellar luxation do not have any significant bone deformity. A limitation in the interpretation of these findings is that the imaging was performed on recumbent dogs, which does not necessarily replicate the stifle joint dynamics at the stance or with locomotion. Nevertheless, those findings suggest that low-grade medial patellar luxation is probably associated with abnormal femorotibial joint mobility alone.

The recent availability of high-speed 320-row computed tomography has allowed imaging to be completed in a few seconds and with lower patient radiation exposure. Using this technology, investigators from Japan studied Toy Poodles with grade two medial patellar luxation while the dogs were awake and standing.<sup>1</sup> Their studies indeed confirmed that these dogs lacked any significant bone deformity. However, with the patella medially luxated, there were marked standing postural abnormalities of the hindlimb. These included external rotation of femur, internal rotation

of tibia and foot, large stifle joint convergence angle, genu varum and toe-in standing in dogs with a grade two medial patellar luxation.<sup>1</sup> The genu varum stance was associated with 30 degrees of internal rotation of the tibia, relative to the distal femur. Clinically this 'bow-legged' stance could be mistaken for distal femoral varus and a medial deformity of the tibial tuberosity.

Awake standing computed tomography is a new and useful imaging modality for objectively evaluating the hindlimb posture of dogs. This study contributes to understanding of the pathophysiology of medial patellar luxation.<sup>1</sup> But it is unclear if medial luxation of the patella is responsible for the femorotibial rotary subluxation, or if the reverse is true. Full details of this study are available in this issue of the journal.

**Conflict of Interest**

None declared.

**References**

- 1 Tomo Y, Edamura K, Yamazaki A, et al. Evaluation of hindlimb deformity and posture in dogs with grade 2 medial patellar luxation during awake computed tomography imaging while standing. *Vet Comp Orthop Traumatol* 2021;35(03):144–152



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