



PLANAR BONE SCINTIGRAPHY AND CT FINDINGS IN DOGS WITH FORELIMB LAMENESS

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Scintigraphy has been used for many years in veterinary medicine, due to its high sensitivity, for the localization of lameness of unknown origin in horses and for the assessment of thyroid/skeletal neoplasia in dogs. In the last few years bone scintigraphy (BS) has become increasingly used in dogs for the localization of occult lameness, when clinical examination and radiographic exam are inconclusive [1]. This study describes BS and computed tomographic (CT) findings in dogs referred for monolateral forelimb obscure lameness, for which a precise localization had not been found by clinical examination nor radiographic exam (no abnormalities at all, mild radiological abnormalities which could not be related to the grade of lameness or symmetrical bilateral alterations). Eight dogs matched inclusion criteria: 3 mixed breed, 1 Bernese mountain dog, 1 Amstaff, 1 Labrador retriever, 1 Australian shepherd and 1 Boxer. BS images showed intense IRU (Increased Radiopharmaceutical Uptake) of elbow joint in 6 cases; these findings coincided to CT alterations of proximal ulna in 5 dogs (mostly located in the medial coronoid process - MCP region: bone density alterations, evidence of fragmentation, new bone formation). In one of these cases, an intense IRU was observed in correspondence of the region of the flexors attachment, with no concurrent abnormalities on CT examination. These findings were suggestive of an obscure form of flexor enthesopathy. In one case we observed diffuse and intense IRU of the carpus joint; this coincided with arthrosis and the presence of a subchondral cyst. One dog showed only mild IRU of the elbow joint, not compatible with the degree of lameness. Because of lack of significant IRU, CT and MRI examination were performed and revealed the presence of an expansive lesion in correspondence of the brachial plexus roots compatible with PNST (Peripheral Nerve Sheath Tumor). BS' high sensitivity allowed the localization of the lameness thanks to the assessment of functional bone state, as already stated in literature [2]. However, its low specificity required additional imaging (CT, MRI), targeted on the region identified on scintigraphic examination. In our experience, the combined use of functional and morphologic diagnostic imaging techniques (bone scintigraphy and computed tomography-magnetic resonance) has been helpful to reach a definitive diagnosis. Further studies, with an increased sample size, are needed to evaluate whether there is a correlation between bone density changes and grade of IRU in limbs affected by different pathologies.

[1] Schwarz T. (2004) Bone scintigraphy in the investigation of occult lameness in the dog. *Journal of small animal practice*. 45, 232-237. [2] Samoy Y. (2008) Single-phase bone scintigraphy in dogs with obscure lameness. *Journal of small animal practice*. 49, 444-450.