Small animal *Review*

Introduction: Computed tomography is an advanced imaging modality, giving detailed three-dimensional images with good differentiation between tissue densities, useful for orthopaedic and soft tissue imaging. The use of contrast improves its accuracy when imaging soft tissues and allows angiography. Computed tomography has become much more widely available in practice in the UK in recent years, with most referral centres and some larger primary practices now boasting their own facilities, often used by other practices when referring cases for outpatient scans. Studies regarding the use of computed tomography are thus becoming more relevant to the general practitioner as well as the referral clinician, and this month's Small Animal Review presents three studies on its use in different conditions.

Alex Gough MA VetMB CertSAM CertVC MRCVS. Postgraduate Researcher, University of Birmingham. alexgough71@hotmail.com

Computed tomographic appearance of sialoceles

Oetelaar et al (2022) reported the results of a retrospective multi-centre case series describing the computed tomography (CT) appearance of sialocoeles in dogs. Previous publications on this subject have only given brief descriptions of a limited number of cases. This study included 13 sialocoeles from 12 dogs, seven cervical, three complex, two sublingual and one zygomatic. All dogs had cytological or histological confirmation of the diagnosis, and all cases had pre- and post-contrast CT studies with the head included. All the sialocoeles had contents that were soft tissue attenuating and non-contrast enhancing. The external margins were smooth, but in some cases the internal margins had nodular or frond-like protrusions. Mineralised foci were seen in seven cases, three of which were identified histologically as sialoliths and two as osseous metaplasia. The authors noted that the nodular and frond-like appearances of the internal margins of the wall is a new finding in this area of study.

Computed tomographic staging of dogs with anal sac adenocarcinoma

Anal sac adenocarcinomas are common neoplasms in dogs, with the potential to metastasise locally and distantly, as well as to cause hypercalcaemia. Sutton et al (2022) reported a retrospective review of dogs with anal sac adenocarcinoma, describing the CT appearance of the neoplasm and its metastases. A total of 70 dogs with confirmed anal sac adenocarcinoma and CT images of each thorax, abdomen and pelvis were included in the study. No association was noted between the size of the anal sac mass and the presence or absence of iliosacral lymph node enlargement. Iliosacral lymphadenomegaly was identified in 71% of cases, and 11% of cases had pulmonary metastases. All the cases with pulmonary metastases also had locoregional lymph node enlargement. The authors noted that locoregional spread of anal sac adenocarcinoma in these cases was common, but distant metastasis was uncommon. The authors also commented that thorough rectal examination and imaging of the iliosacral lymph nodes is important to assess potential local spread, even if an anal sac mass is small.

Differentiating malignant and benign focal liver lesions with computed tomography

Focal liver lesions in dogs are common findings on both ultrasound and CT, so assessing whether they are benign or malignant can be challenging, with no clear consensus on the differentiation. Burti et al (2021) performed a meta-analysis of studies to help differentiate malignant and benign focal liver lesions. The authors searched for studies on the diagnostic accuracy of CT in diagnosing focal liver lesions in dogs. Eight studies were included in the review, totaling 404 dogs. Useful qualitative CT features of the lesions included the presence or absence of well-defined margins, presence of a capsule, evidence of changes in lymph nodes, and changes in the arterial, portal and delayed contrast phases. The pooled sensitivity of these features ranged from 0.63 in the case of abnormal lymph nodes to 0.79 for well-defined margins. Pooled specificity ranged from 0.64 for well-defined margins to 0.82 for heterogeneity in the delayed contrast phase. Useful quantitative measures included maximum dimensions, volume, and attenuation pre- and post-contrast. Larger dimensions and volume and lower attenuation were associated with a higher likelihood of the lesion being malignant. The authors concluded that this meta-analysis gives useful information on determining whether focal lesions are malignant using CT findings.

References

Burti S, Zotti A, Contiero B, Banzato T. Computed tomography features for differentiating malignant and benign focal liver lesions in dogs: A meta-analysis. Vet J. 2021;278:105773. https://doi.org/10.1016/j.tvjl.2021.105773

Oetelaar GS, Gan Heng H, Lim CK, Randall E. Computed tomographic appearance of sialoceles. Vet Radiol Ultrasound. 2022;63(1):30-37. https://doi.org/10.1111/vru.13022

Sutton DR, Hernon T, Hezzell MJ, Meakin LB, Gould SM, Bradley KJ, Major AC. Computed tomographic staging of dogs with anal sac adenocarcinoma. J Small Anim Pract. 2022;63:27–33. https://doi.org/10.1111/jsap.13426

© 2022 MA Healthcare Ltd