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INVESTIGATION OF MIDDLE EAR DISEASE AND CORRELATION WITH CLINICAL SIGNS IN PET RABBITS

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Ear disease, involving the middle and external ear, is commonly reported in pet rabbits with varying degree of clinical signs (Mancinelli and Lennox, 2017). Depending on the severity and type of otitis, different clinical signs may be observed in rabbits.

Otitis refers to inflammation of one or more structures within the ear and includes otitis externa (OE) which involves the external ear canal and otitis media (OM) which involves structures in the middle ear (tympanic membrane, bony acoustic duct, and tympanic cavity). OM is characterised by material or fluid within the tympanic bulla and is relatively common in pet rabbits (de Matos, et al., 2015). It can however be challenging to clinically assess and diagnose antemortem, as affected rabbits are often asymptomatic, unless there is associated OE (de Matos, et al., 2015). OM can be caused by an extension of OE through a ruptured tympanum or a secondary problem from an upper respiratory tract infection (sinusitis/rhinitis) via the Eustachian tube (Mancinelli and Lennox, 2017). Computer Tomography (CT) is the most reliable imaging modality for identification of otitis media in rabbits in comparison to radiography and ultrasonography, which are less accurate when diagnosing early or intermediate ear disease (King et al., 2012). A grading scale can be used to objectively assess CT changes and determine the severity of OE and OM in pet rabbits (Richardson et al., 2019).

This retrospective analytical study aimed to evaluate the incidence of middle ear disease in 83 pet rabbits presented to a single referral clinic over a 3-year period January 2018 - January 2021 and correlate severity of CT findings with presenting clinical signs.

All rabbits that underwent CT imaging during this time period were assessed and those with OE and/or OM were included. The rabbits were selected based on CT findings, which were then correlated to any clinical signs based on information from patient history or clinical exam.

For both OM and OE a grading scale created by Richardson et al. 2019, was used to determine disease severity for each patient ((I=mild, IV=severe disease).

Approximately a quarter (20/83, 24%) of the study population were asymptomatic. This is similar to another study which found 27% of rabbits to be subclinical (de Matos et al, 2015). Our study demonstrated that rabbits with both OE and OM were more likely to show significant clinical signs compared to cases with solely OE or OM. Overall rabbits with OM were less likely to have associated clinical signs, but as the disease grade worsened, there
was an increased likelihood of more clinical signs being evident. On average rabbits were likely to show at least two or three clinical signs associated with ear disease.

Individual clinical signs in rabbits with OM and OE were evaluated separately. Rabbits with OM were more likely to have ear base swellings, facial contracture and facial nerve paralysis as presenting clinical signs. Rabbits with OE were more likely to have ear base swellings and head shaking as presenting clinical signs.

This study has shown that the presence of key clinical signs associated with ear disease can help inform veterinarians as to the severity and location of ear disease, however awareness that 1 in 4 affected rabbits may be subclinical is important. In conclusion identifying and recognising clinical signs of ear disease is important for the early diagnosis of otitis in rabbits, to enable appropriate treatment of cases and improve the overall outcome for rabbits with ear disease.

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