CAN CHANGES IN PAW DISTRUBUTION OF PEAK PRESSURE OVER TIME AID IN THE DIAGNOSIS OF FELINE OSTEOARTHRITIS?

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 The Cat Prospective Ageing and Welfare Study (“Cat PAWS”) is a recently established longitudinal study into the ageing of cats, based at the University of Liverpool, UK. Cats are enrolled from the ages of 7-10 years and then followed prospectively by health evaluations on a biannual basis. Data are collected on physical, biochemical and clinical parameters, to study the feline ageing process. In addition, gait analysis is planned for all cats on a regular basis, using a Tekscan HRVS Walkway. Osteoarthritis (OA) is an important disease of ageing cats, but is currently under-recognised, not least because of the difficulties in diagnosing it. There is an urgent need to develop non-invasive objective approaches to analyse the gait of cats to help recognise and manage OA. In this pilot study, we have performed an initial proof of concept of the system, using data generated from two cats: a 14-year-old domestic shorthair with bilateral elbow osteoarthritis and right-fore lameness and a 17-year-old domestic shorthair without any orthopaedic abnormalities.

 Pilot data confirmed that the pressure walkway could detect asymmetry in the gait. In addition there were differences in the peak pressure distribution across the paws when comparing the cat with bilateral elbow arthritis and the cat without orthopaedic abnormalities. This was most apparent in the hind paws with a more caudal peak pressure distribution in the cat with bilateral elbow arthritis.

 These early results provide an initial confirmation that the walkway is suitable for use in a prospective study of feline ageing to diagnose gait changes associated with asymmetry. The differences in peak pressure distribution observed between the two cats (with and without OA), suggest a possible utility in prospective gait monitoring. A larger data set will now be required to validate the approach further and refine the technique before it can be used routinely.