

High prevalence of gait abnormalities in pugs

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Introduction

In a recent British study, lameness, was reported in 2.4 per cent, and spinal cord disorders were reported in 1.4 per cent of pugs under primary veterinary care in England. However, the reported prevalence of spinal cord disorders presented from the UK study corresponds poorly with a Swedish report, which suggested a seven-fold increase in mortality for ataxia, paresis and collapse, but no increase in relative risk for general locomotor problems in pugs compared to the risk in other breeds. Given the increasing popularity of pugs this study aimed to determine the prevalence of gait abnormalities in the breed.

Approach

All pugs registered with the Swedish kennel club aged one, five and eight years old in 2015 and 2016 were invited to participate in a questionnaire-based study on gait.

In total, 550 pugs were included in the study. Pug owners were asked questions regarding the immediate signs of unsound gait; for example, lameness, ataxia, weakness and other indirect signs of gait abnormality, such as an inability to jump, abnormal wearing of the nails and/or the skin on the dorsum of the paws. In addition to specific questions aimed to identify possible gait abnormality, general questions regarding the health of the pug were also asked. In cases where the pug was no longer alive, the owners were asked to provide information regarding cause of death.

As well as being asked to complete the questionnaire, owners of all pugs were encouraged to send video footage of their pug's gait. The videos were analysed by the authors and the results compared to the results of the questionnaire.

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KEY FINDINGS

- Gait abnormalities were a common finding in the pug breed, with a prevalence of 30.7 per cent.

Results

This study showed that the prevalence of gait abnormalities in the pug breed was high and the prevalence increased with age. Indeed, the single most common cause for death/euthanasia, reported by the owner, was an abnormal gait. Wearing of the nails and/or the skin on the dorsum of the paws, predominantly in the thoracic limbs, were frequently found and from a comparably young age.

Pugs with a gait abnormality (30.7 per cent of all pugs) included all pugs with an owner-reported gait abnormality (20.4 per cent) and those that were reported to wear down their nails and/or the skin on the dorsum of their paws in the questionnaire. The high prevalence of wearing of the nails and the skin on the dorsal aspect of the paws reported in the questionnaires, and the fact that lameness was not a common finding in submitted videos, suggests that the majority of gait abnormalities in the pug were related to neurological rather than orthopaedic disorders.

An association was observed between abnormal gait and age, with gait abnormalities being significantly more common in older pugs ($P=0.004$). An association was also found between abnormal gait and dyspnoea, with dyspnoea being significantly more common in pugs with gait abnormalities ($P<0.0001$).

Forty-six of the 59 (78.0 per cent)

owners that submitted a video recording claimed that their dogs had a normal gait. Subtracting from this the number of video-taped dogs that were reported to wear down their nails and/or skin on the paws (six pugs) decreased the number of pugs reported by their owners to show a normal gait from 78.0 to 67.8 per cent. When the videos were analysed by the specialists, they agreed that 40 out of 59 (67.8 per cent) pugs showed a normal gait.

Interpretation

The assessment of the dog's gait was performed by the owners, likely making the results from the questionnaire less reliable. In addition, the response rate (26 per cent) of this study might have been affected by the Swedish campaign for the right of brachycephalic breeds to breathe, which was launched the same year that the invitation to participate in the study was sent out. The final study population might also be biased as it could be that owners of pugs suffering from obvious gait abnormalities are more prone to respond to the questionnaire. Alternatively, it might be that owners who have pugs with a normal gait have a specific interest in responding to the study invitation (eg, breeders).

Significance of findings

The results of this study suggest that gait abnormalities are a more significant health problem in pugs than previously reported in the scientific literature. The results presented in this study may serve as a background to future studies on underlying pathology and clinical significance of gait abnormalities in the pug breed.



a Pug without abnormal wearing of the nails and/or the skin on the dorsum of the paw (a), pug with abnormal wearing of the skin on the dorsum of the paw (b), pug with abnormal wearing of the nails (c)