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Prevalence of effects of osteochondral lesions and intra-articular osseous fragments on the outcome of the lameness examinations within the pre-purchase examinations of 1440 German Warmblood Horses

Marc Koene, DVM, board certified equine specialist  
Tierärztliche Klinik für Pferde Lüsche, Germany
Anouk de Ruyter  
Animal breeding and genetics ABG 70430

Osseous fragments in joints and other radiological signs of osteochondrosis (OC) are frequently found during the radiological examination at the pre-purchase examination of a horse. Several studies suggest that there is an influence of genetics on the development of connective tissue disorders. In several countries programs for screening dams, sires or progeny have been introduced (Netherlands, Germany and Switzerland), but the results are limited. This might be due to little understanding of the background of OC and the relation with lameness. Furthermore the relationship of OC in the different joints is not known. The aim of this study is to determine the prevalence of osseous fragments and other OC findings at the pre-purchase examination of Warmblood horses of any age class which are mostly of German origin. It has been tried to find a possible relationship for the lameness evaluation of the flexion test, trotting on a firm/soft surface on a circle and trotting on a straight line with the presence of lesions in the different joint per limb. Furthermore a possible influence of training, size/shape of osseous fragment, predilection site, gender and age has been tried to find.

From 2001 till June 2005, 1440 warmblood horses mostly form German origin were pre-purchased examined in the Tierärztliche Klinik für Pferde Lüsche, Germany. Horses were included in this study if the examination was accompanied of a radiological examination. From every horse X rays were taken: lateromedials of the lower digit of front and hind limbs, oxspring view of the navicular, two views oft the hock, and in most cases the stifle. The information used obtained from the records were age and gender of the patient, its intended use, lameness examination obtained by trotting on the circle on a firm and soft surface, trotting on a straight line and outcome of the flexion test. In the different flexion tests the metacarpus, and lower digits and hock were flexed. Furthermore the presence or absence of any OC lesions was taken up into the analysis. If an osseous fragment was present its shape, size and predilection site were recorded. The pre-purchase examination consisted of a radiological examination and a clinical examination. Data screening and analyzing was be performed using the statistical package SAS, version 9.1. Furthermore the influence of age, sex and training was analyzed. Trotting on a circle on a firm surface, flexion test, trotting on a straight line on a firm / soft surface and working on a soft surface were part of the orthopaedic evaluation.

The prevalence of osteochondrosis in these horses was 34% of which about 76% had loose fragments in the joints (=osteochondrosis dissecans). This is consistent with other studies performed on Hanoverian horses on the prevalence of osseous fragments, 31.6% (Stock, 2004) and 31.7% (Schober, 2003). It was found that the presence of OC in horse had a greater effect at the left side of the horse as on the right seen when looking at the lameness evaluation. Why this effect occurs can not be clarified, but it is has been seen in studies on Dutch Warmblood horses as well (Kinderen, 2005). When paying attention to the size of an osseous fragment it is interesting that a big fragment in the metacarpo-phalangeal joint gives significantly more lameness at the flexion test, this can be explained by the fact that a positive test suggests problems in the fetlock joint. The fact that horses showed more stiff joints on a low level of training may be due to the fact that clinical signs of OC often develop at the introduction of training. It is not very likely that horses with problems at a low level of training will be pre-purchased examined or continue training at higher levels.

According to the results of this study mares were significant more positive on the different lameness examinations. Horses with an age between 3 and 5 years old showed more often clinical findings than the ones in other age categories. The presence of osseous fragments in the joint and other radiological findings related with osteochondrosis are common in Warmblood horses. Different shapes of fragments are equally represented in the examined horse population even if competing on a high level which means that heavy stress in the joints will not influence the shape of the fragment. Also the rough shaped fragmented were not highly unifying with the presence of lameness. It is therefore questionable if one should not be more concerned about the presence of a bony reaction around the site of the fragment instead of the size and shape of it.
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