THE SIGNIFICANCE OF SUPRACONDYLAR LYSIS IDENTIFIED IN REPOSITORY YEARLING RADIOPHGRAPHS ON THOROUGHBRED RACE PERFORMANCE

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Introduction:
Supracondylar lysis (SCL) occurs secondary to chronic synovitis of the fetlock joint, leading to the local resorption of cortical bone underlying the palmar pouch of the joint capsule. Previous literature on SCL and its clinical significance is limited and there is no reported objective grading system. This study had three aims; 1) report an objective grading scheme for SCL, 2) investigate the effect of SCL on racing performance of affected yearlings for each grade compared to sibling controls, 3) determine if the presence of other concurrent radiographic changes in an affected joint will affect race performance.

Materials and methods:
Forelimb fetlock repository radiographs of 163 Thoroughbred yearlings (TBy’s) with previously reported SCL between 2009-2019 were reviewed independently by two veterinarians (SJ and ARA) in a blinded manner. Each horse was assigned an SCL grade by measuring the difference between the narrowest point across MCIII proximal to the condyles, and 8cm proximal to the physis on a flexed lateromedial projection (Grade 1 = 2-3mm, Grade 2 = 4-5mm, Grade 3 = 6mm or greater). The presence of other radiographic changes within the affected fetlock were also recorded. For the purpose of analysis, if SCL was apparent bilaterally, the horse was classified according to its worst grade. Online race records (www.racingaustralia.horse) were available for 98 affected horses. For each SCL grade, race records of affected horses were compared with those of 161 pooled sibling controls. Additionally, race records of affected horses with ‘other radiographic changes’, were compared to those without any other radiographic changes. Measures of racing performance were assessed using Pearson’s Chi-squared analysis (or Fisher’s Exact Test when appropriate) with significance set at P< 0.05.

Results:
The prevalence of SCL between 2009-2019 in TBy’s was 1.95% (163 of 8347). Of the affected horses, 41% were Grade 1, 46% were Grade 2, and 13% were Grade 3. SCL was present bilaterally in 64% of cases. For horses with SCL there was a decrease in ‘ability to place’ (Grade 1, Odds Ratio (OR) = 3.7, p=0.0002; Grade 2, OR=4.8, p=0.02; Grade 3, OR = 11.1 , p=0.01) and ‘average earnings per start’ (Grade 1, p=0.0002; Grade 2, p=0.03; Grade 3, p=0.01). There was a significant decrease in ‘ability to place’ (OR=3.55, p=0.02) for horses with a concurrent articular abaxial PSB fracture, compared to affected horses without this lesion. For all other radiographic changes associated with SCL, there were no statistically significant differences for any measure of racing performance compared to affected horses without other changes.

Relevance to Australian clinical equine practice
When evaluating pre-sale radiographs, the uncertainty associated with accurately prognosticating radiographic lesions is of concern to veterinarians. This study provides an objective grading scheme for SCL, and reports that TBy’s with SCL are less likely to perform compared to controls, and TBy’s with concurrent abaxial PSB fracture are 3.55 times less likely to place in a race compared to affected (SCL) horses without this lesion. Although relatively large numbers, the results of this study highlights the limitations in determining the significance of radiographic changes seen on repository radiographs.