Delamination of articular cartilage in the medial femorotibial joint and femoropatellar joint following intra-articular therapy with Triamcinolone acetonide and gentamicin sulphate in yearlings for the treatment of subchondral lucencies; a series of five cases

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Abstract

Subchondral lucency (SCL) of the medial femoral condyle (MFC) are a cause of lameness in young horses, potentially affecting future athletic performance. With the prevalence of pre-sales screening radiographs on Thoroughbred weanlings and yearlings, these lesions are often detected at various stages of progression, before showing clinical signs. Conservative treatment have been recommended in asymptomatic cases but with little evidence for them being necessary and accumulating evidence that most cases remain asymptomatic despite treatment or lack of treatment. In addition, these conservative treatments frequently yield un-satisfactory outcomes in treating clinically significant SCLs. Many yearlings presented for surgical treatment of MFC SCL will have already undergone unsuccessful conservative management.

In New Zealand, contracted veterinary appraisal of pre-sale repository screening films is a key part of a purchasers' assessment of risk when buying Thoroughbreds for racing prospects. Young horses with evidence of varying degrees of SCLs, could be reduced in value due to the risk of those individuals developing larger, potentially performance limiting SCLs. Producers and veterinarians look for management strategies may that help improve the appearance of early SCLs through identification of higher risk individuals via screening films as weanlings (eight - ten months of age).

This report documents five asymptomatic horses, treated for MFC SCLs. managed conservatively via confinement and Intra-articular (IA) injections with 10mg triamcinolone acetonide (TCA) and 40mg of gentamicin sulphate into the medial femorotibial Joint (MFTJ). All became acutely lame on the treated limbs, developing marked effusion of both the MFTJ and the femoropatellar joint (FPJ). Clinical assessment and synovial fluid analysis confirmed all cases were non-septic. At the time of surgery, no joints had radiographic changes detected within the FPJ or MFTJ. While examining the MFTJ and FPJ using standard arthroscopic techniques, large areas of detached cartilage were present in all joints. These lesions had the appearance of acute delamination of the articular cartilage exposing an underlying, pale, avascular subchondral bone plate below. The lesions were located on the palmar aspect of the distal patella, the lateral and medial trochlear ridges, and the central articular surface of the MFC.

All cases in this report received recommended therapeutic doses of TCA. To the authors' knowledge, this case series reports previously unreported, iatrogenically induced damage of articular cartilage of yearlings following the attempted medical treatment of MFC SCLs. Recent studies have shown that treatment of low grade SCLs isn't required as they have no detrimental

impact on racing performance and a low incidence of progression. This case series demonstrated that single or repeated injections of TCA and gentamicin in juvenile horses with MFC SCL appears to have negative effects on the articular cartilage, resulting in multiple sites of delamination. Recent research suggests that the treatment of SCLs should be limited to symptomatic or higher-grade lesions. We propose that If corticosteroids are to be used then they should be administered directly into the cystic lining, under arthroscopic guidance, rather than into the IA space. Further research is required into the potentially negative side effects of IA corticosteroids on the cartilage of juvenile horses is required.

Key words: Subchondral lucencies, Medial Femoral Condyle, Stifle arthroscopy, Triamcinolone injection.