Angular limb deformity

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Angular limb deformities (ALDs) are a common finding in foals, although controversy remains over the most appropriate method of correction. There is a vast difference in the methods of treatment of ALDs between stud farms, veterinarians and countries, with most relevant parties claiming a similar success. There is no doubt, conservative management practices can result in significant improvements in the severity of ALDs. However, there would appear to be a 'window of opportunity' for the effective use of growth acceleration surgical techniques, which is often lost if conservative methods of management are used. Until more recently, growth retardation surgical techniques have been used with some caution because of the need for prolonged post operative care, a second surgical procedure for implant removal, and variable post operative cosmetic results. With the development of single-position screw techniques, the use of growth retardation surgical procedures has become more popular.

ASSESSMENT OF ALDs

The classification of ALDs is well described elsewhere, and is largely undertaken using a subjective visual assessment. It is the author's experience that any decision on the need for treatment of ALDs should be made with consideration of not only the severity and location of the deviation, but also the change in conformation seen on serial weekly examinations. Conformation can be temporarily influenced by exercise, therefore serial examinations should be undertaken with the knowledge of how the foal is being housed and managed prior to each examination. There would also appear to be a significant genetic influence from the foal's dam and sire. Therefore, assessment of the conformation of the dam and sire should be undertaken. Knowledge of previous progeny's conformation, and their response to treatment, is also useful. A tailored approach to the treatment of ALDs for different stud farms is often needed, to counter the different management techniques between farms.

TREATMENT OF ALDs

The author utilises the following techniques for treatment of ALDs: restricted exercise; hoof trimming; hoof wall extensions or glue-on shoes; periosteal elevation and temporary transphyseal bridging (TTB). In Australian conditions prolonged stall rest is utilised with caution due to the risk of other complications. Respiratory disease, other forms of developmental orthopaedic disease, and acute musculoskeletal overload injuries upon reintroduction to the paddock, are all potential complications of prolonged stall rest. Less invasive techniques using hoof wall extensions or periosteal elevation are popular with a perceived benefit, less cost, and less morbidity than TTB techniques. In 2004, Scone Veterinary Hospital undertook a clinical study comparing a single-position screw technique with a 2 screw and wire technique for TTB. Fifty-five limbs underwent a single-position screw technique and 19 limbs a 2 screws and wire technique at the distal metacarpus for treatment of varus deviation. The rates of improvement in the deviation at different ages were compared between the 2 techniques, as was the cosmetic result. The study utilised a subjective visual grading system for assessing the degree of deviation. This, combined with a lack of a control limb, meant it was not possible to utilise statistical analysis to critically evaluate the study. However, the single screw technique was identified as being quicker and easier to place than the 2 screws and wire technique, and an effective method of TTB up to 5 months of age. The technique required less post operative care while providing a superior cosmetic result. Over-correction was not seen in any case, nor has it been seen in over 300 cases that have undergone this
procedure since 2004. In an attempt to avoid a second surgery for screw removal, an absorbable 4.5 mm screw has been used on 6 cases of varus deviation at the distal metacarpus in 2007. Using radiographic measurements, an improvement in the degree angulation was identified, indicating these screws had sufficient holding power to retard growth at this physis. These preliminary results give us confidence to further investigate the use of absorbable screws in the future.

FURTHER READING

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