Diagnosis and Treatment Considerations for Nonphyseal Long Bone Fractures in the Foal

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KEYWORDS

• Fracture • Emergency management • Coaptation

KEY POINTS

- Many long bone fractures that are not considered repairable in the adult horse are repairable in the foal. This is largely because of reduced patient size and more rapid healing in the foal.
- When there is no articular communication, the long-term prognosis for athletic function can be very good.
- Emergency care and transport of the foal with a long bone fracture is different than the adult.

INTRODUCTION

With advancements in veterinary care, procedures, and surgical implants, many fractures that were once considered "not fixable" in the adult horse can now be repaired with good outcomes. However, there are many long bone fractures that are still considered irreparable or unlikely to succeed in the adult horse because implant failure is expected to outpace bony healing. In the foal, smaller size and a faster rate of healing translate to successful outcomes for many of these long bone fractures. The purpose of this article is not to inform on how long bone fracture repair in the foal is performed. Rather, it is to outline differences that exist between the foal and the adult horse in emergency fracture management, surgical options, and long-term outcome. It is important for the veterinary practitioner to recognize these differences when discussing options with horse owners after identifying long bone fractures in the foal. When long bone fractures occur in the foal and surgical fixation is to be pursued, there are

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several considerations in emergency care, splinting, and transport that are different to the adult that should be kept in mind.

SCAPULA

Complete scapular fractures that cause axial instability can occur in the neck or body and occur most commonly secondary to direct trauma from kicks, collisions, or falls in the young horse. Fracture will result in acute, severe lameness, an unwillingness to advance the limb and usually significant swelling over the shoulder. Crepitation and pain on palpation of the shoulder region may be appreciated. Radiographs made in the field are usually successful at diagnosing the fracture due to the foal's small size. Radiographic projections should include medial to lateral and craniolateral to caudolateral oblique views (Fig. 1). Differentials include humeral fracture, soft tissue trauma, scapular fracture that does not cause axial instability, suprascapular nerve injury, and depending on the age of the foal, infection of musculoskeletal structures. When fracture is not recognized in the acute stages, swelling will subside, lameness will persist, and marked muscle atrophy of the supraspinatous and infraspinatous muscles will occur either due to injury to the suprascapular nerve or to disuse.

Successful repair of complete neck and body fractures with open reduction and internal fixation in young horses has been reported using both dynamic compression plates and locking compression plates.[1–3] When the fracture is nonarticular, surgical options can provide a good prognosis for future athletic performance (Fig. 2). When neck or body fractures are minimally displaced and nonarticular and the foal is willing to bear some weight, complete healing can occur with stall confinement alone but is very likely to result in an unsatisfactory outcome due to prolonged lameness and resultant severe support limb abnormalities.

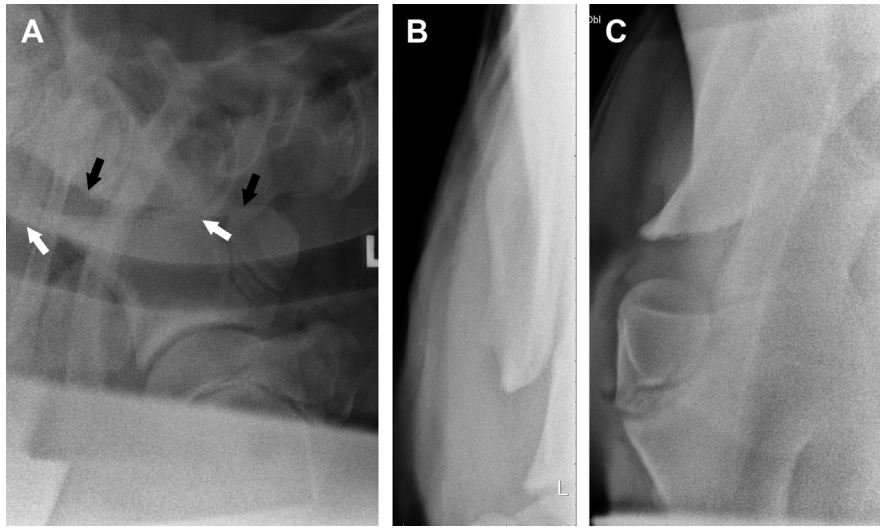

Fig. 1. Standing radiographic projections of a 3-month-old warmblood filly with a simple, short oblique, complete, closed, medially and caudally displaced scapular neck fracture. (*A*) Medial to lateral projection showing the distal (*white arrows*) and proximal (*black arrows*) ends of the fracture. (*B*) Cranial to caudal projection with a small portion of the scapulohumeral joint and the proximal fragment. (*C*) Cranial-medial to caudal-lateral oblique projection demonstrates the fracture well.