



Management of Phalangeal Fractures in Horses

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Phalangeal fractures, particularly those involving the distal phalanx (coffin bone), are relatively common in equine practice and represent a significant cause of lameness. These injuries can result from trauma, repetitive stress, or underlying pathology. This article provides a comprehensive overview of the management of phalangeal fractures in horses, synthesizing findings from veterinary manuals, peer-reviewed studies, and clinical reports. It explores epidemiology, clinical signs, diagnostic approaches, treatment modalities, prognosis, and future directions. Written in a popular science style, the article aims to raise awareness among horse owners, trainers, and veterinary enthusiasts about the challenges and advances in managing these fractures.

Introduction

Equine athletes are prone to musculoskeletal injuries due to the high demands placed on their limbs. Among these, phalangeal fractures—particularly of the distal phalanx—are noteworthy for their impact on performance and welfare. The distal phalanx, also known as the coffin bone, plays a critical role in weight-bearing and locomotion. Fractures in this region can severely compromise a horse's ability to move and compete.

Epidemiology and Risk Factors

Prevalence: Distal phalanx fractures are not uncommon, especially in performance horses such as racehorses and jumpers.

Causes: Trauma (e.g., kicks, falls), repetitive stress from high-intensity exercise, and conformational defects.

Age and Use: Young, active horses are at higher risk, though fractures can occur across all age groups.

Clinical Presentation

Signs of phalangeal fractures include:

Sudden onset of lameness, often severe. Heat and pain localized to the hoof.

Reluctance to bear weight. Digital pulse increase.

In some cases, fractures may be subtle, with intermittent lameness that worsens with exercise.

Diagnosis

Radiography: The gold standard for diagnosing distal phalanx fractures. Multiple views are often required.

Advanced Imaging: CT and MRI can provide detailed visualization of fracture configuration.

Clinical Examination: Hoof testers, palpation, and gait analysis help localize pain.

According to the Merck Veterinary Manual, fractures are classified based on their configuration and whether they involve the distal interphalangeal (coffin) joint. Wing fractures, sagittal fractures, and comminuted fractures are among the common types (Moorman, 2024).

Treatment Options

Conservative Management

Stall Rest: Essential for fracture healing, often lasting several months.

Hoof Support: Bar shoes, rim shoes, or fiberglass casts to stabilize the hoof. Pain

Management: NSAIDs to reduce inflammation and discomfort.

Surgical Management

Internal Fixation: Screws or pins may be used in certain fracture types, especially sagittal fractures.

Advanced Techniques: Use of lag screws and arthroscopic guidance in complex cases.

Rehabilitation

Gradual return to exercise under veterinary supervision. Controlled hand-walking followed by light turnout.

Traditional treatments, such as stall rest and bar shoes, remain effective for simple wing fractures, which often heal well irrespective of intervention (UK Vet Equine, 2023; Merck Veterinary Manual, 2024).

Prognosis

Simple Wing Fractures: Generally favorable prognosis with appropriate rest and support.

Sagittal and Comminuted Fractures: More guarded prognosis, especially if the coffin joint is involved.

Performance Horses: Return to athletic function depends on fracture type, severity, and management.

Future Directions

Advances in imaging and surgical techniques are improving outcomes for equine phalangeal fractures. Research into regenerative therapies, such as stem cell applications and biologics, may further enhance healing. Preventive strategies, including proper hoof care, balanced nutrition, and training modifications, are critical in reducing fracture risk.

Conclusion

Phalangeal fractures in horses represent a significant challenge in equine medicine. While traditional management strategies remain effective for certain fracture types, modern imaging and surgical interventions are expanding treatment possibilities. Awareness among horse owners and trainers, combined with timely veterinary intervention, can greatly improve outcomes.

References

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