

Farriery for Chronic Laminitis

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KEYWORDS

- Chronic laminitis • Lamellae • Displacement • Realignment
- Therapeutic farriery • Wooden shoe

Laminitis is considered chronic once the distal phalanx has displaced within the hoof capsule. Chronic laminitis generally occurs as a direct sequel to acute laminitis, but at present, it is not possible to predict which horses with acute laminitis will progress to chronic laminitis let alone when it will occur or if it will happen at all. Because the bulk of laminitis research has been directed toward acute laminitis, treatment regimens for chronic laminitis are generally empirically based on the past experience of the attending clinician/farrier. The biggest challenge to the veterinarian and the farrier is to improve the morphology and function of a foot or feet that may have potential, substantial, and possibly permanent structural changes. It should be remembered from the onset that the extent of the pathologic condition of the lamellae influences not only the ability to treat a horse with laminitis but also the eventual outcome of a laminitic case.^{1,2} Each case of laminitis should be approached on an individual basis, noting the predisposing cause, clinical signs, physical examination, movement, foot conformation, and structures of the foot that can be used to change the forces placed on or within the hoof capsule. These observations then suggest the overall goals of treatment that address the anatomic and functional abnormalities identified. The approaches to treatment should be based on principles aimed at restoring the form and function in a given laminitic foot rather than on any method of farriery or a product. This article presents an overview of chronic laminitis and addresses those farriery principles that can be used to treat chronic laminitis. It is imperative that medical, metabolic, environmental, and dietary issues be addressed concurrently with foot management in chronic laminitis.

CHRONIC LAMINITIS

Chronic laminitis is defined by the presence of mechanical collapse of the lamellae and displacement of the distal phalanx within the hoof capsule.³ There are 3 manifestations of displacement of the distal phalanx: dorsal capsular rotation, distal displacement (sinking), and mediolateral rotation or asymmetric distal displacement (**Fig. 1**). A combination of all 3 forms of displacement can exist simultaneously. Lamellar

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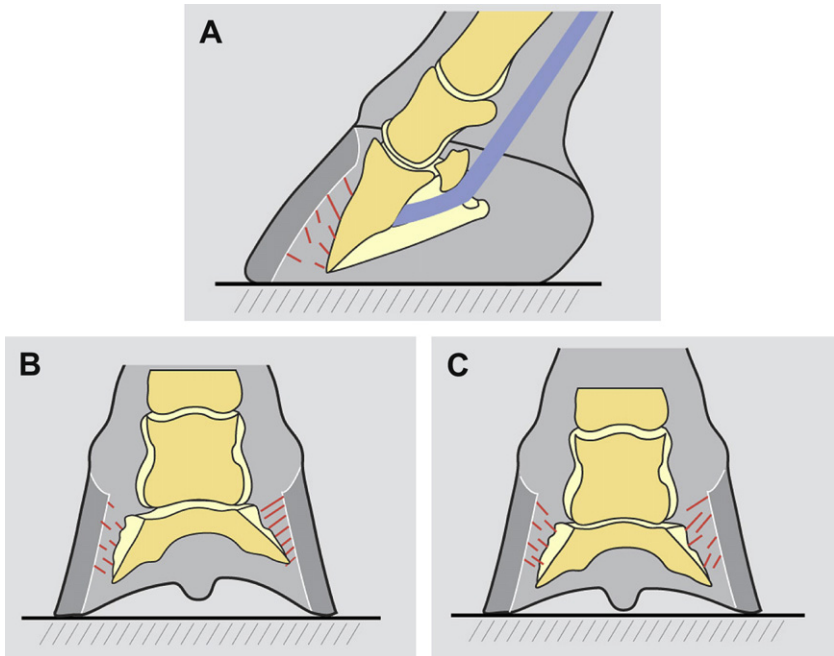


Fig. 1. (A) Dorsal capsular rotation, (B) mediolateral rotation, and (C) distal displacement (sinking).

separation of the distal phalanx occurs when the forces acting on the lamellae exceed their tensile strength. In simplistic terms, the acute phase is the phase of injury and chronic phases are phases of tissue repair. The eventual outcome of the treatment for horses with chronic laminitis can be divided into function and morphology. The functional outcome is most likely to dictate the difference between athletic performance, pasture soundness, and euthanasia. The morphologic outcome is more likely to determine the degree to which continued and potentially lifelong therapeutic measures are necessary. At the onset of chronic laminitis, the eventual outcome is hard to predict, but the most important indicator for survival remains to be the severity of the initial insult to the lamellae. The appearance of the initial radiographs does not necessarily correlate with either the functional or the morphologic outcome. The thickness of the sole and the angle between the solar surface of the distal phalanx and the ground appear to be better indicators of the degree of difficulty in treating horses with dorsal capsular rotation, and both the parameters appear more useful than using just the degree of rotation in successfully predicting the rehabilitation of the horse.⁴ In contrast to treating horses with acute laminitis, in which medical therapy frequently assumes priority, hoof care is the most important element for success in treating horses with chronic laminitis.

PATHOPHYSIOLOGY OF CHRONIC LAMINITIS

A brief review of the pathophysiology and the mechanical events that occur in the lamellae, leading to chronic laminitis, may provide some useful insight into the principles of therapy. Separation of the lamellae is a consequence of the severity of the original pathologic processes, such as inflammation, ischemia, thrombosis, and the

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