

Pedal Osteitis

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Pedal Osteitis is defined as an inflammatory disorder of the coffin bone that is characterized by either diffuse or focal radiolucent changes and new bone formation.

The disorder is a result of persistent inflammation in the foot.

Since the coffin bone does not have a medulla (bone marrow), the bone inflammatory process is labeled **osteitis** as opposed to osteomyelitis.

The disorder is more commonly seen in front limbs since 60 percent of the horse's weight is distributed there, but it can affect the hind feet as well.

Involvement can be unilateral or bilateral depending on the cause.

There are two types of pedal osteitis: nonseptic and septic.

Causes of Pedal Osteitis are varied - it can occur as a primary or secondary condition.

Treatment is often aimed at correcting the underlying condition that caused its development.



Primary **non-septic pedal osteitis** typically results from severe or chronic sole bruising sustained from repeated concussion during exercise on hard surfaces.

Secondary non-septic Pedal Osteitis can be the result of conformation faults or improper farrier work that have caused uneven weight bearing on the sole.

Hoof testers elicit positive responses between the sole and wall in diffuse or localized areas. Lameness can vary in degrees of severity and is often exacerbated after exercise or shortly after trimming or shoeing.

Radiographic changes are required to make a true diagnosis of both types of Pedal Osteitis.

Bone demineralization that occurs in this disorder can often be difficult to detect in standard type field x-rays, since numerous variables can affect a radiographic image, such as amperage and distance from the machine. CR and DR better for identification.

Multiple x-rays are often required. Typically, bone demineralization will occur around the toe margin and irregular bone formation is seen along the solar margin or the dorsal (top) surface of P3.





The goal in shoeing is to: reduce concussion, avoid sole pressure, protect sole from a hard environment, avoid sole loading, reduce stress to toe area (ex - reduce toe length, roll shoe toe for easing enrollment), provide some caudal support (ex - straight bar shoe).

I find using a straight bar continuous cuff shoe effective as well as an aluminum straight bar shoe. Both are used with a Superfast rim and pour in hoof packing.



Septic Pedal Osteitis is caused by a pathogen that infects the soft tissue of the foot and extends into the coffin bone.

Causes of Septic Pedal Osteitis include a penetrating injury to the soft tissue, subsolar abscess, untreated white line disease, laminitis, infected corns or any long-standing soft tissue infection of the hoof. The infection can involve the coffin bone, sole structure, laminae and the hoof wall.

Symptoms include drainage from the foot - often in the form of a tract leading directly to and from the coffin bone.

Radiographic changes that are specific to the septic form of Pedal Osteitis show isolated areas of avascular bone that have become necrotic and have separated from the coffin bone known as sequestrums.

These necrotic pieces can be designated as a primary sequestra (if the piece is entirely detached), secondary (if it's still loosely attached) and tertiary (if still attached by remaining in place).

Radiographs will also reveal bone density loss at the laminar attachments. MRI scans can be used to detect adjacent soft-tissue infection.



Treatment for Septic Pedal Osteitis often involves surgical debridement by the veterinarian under neural block or general anesthesia to drain purulent exudate, remove the sequestra, and curettage of infected or necrotic bone and tissue.

From case studies, up to one-fourth of the coffin bone can be removed without permanent long-term effects.

The farrier can make a hospital plate to cover the area, provide relief from any sole pressure and to allow observation and treatment of the foot.

Sole-hardening agents can be applied once granulation tissue is level with the sole.

Recovery from Septic Pedal Osteitis may require a lengthy convalescence, but the prognosis is excellent unless the underlying cause is laminitis.

I find a slight positive pressure heart bar shoe on the support limb and aluminum straight bar shoe with hospital plate effective.





Finished Aluminum Heart Bar Shoes

With proper diagnosis, early detection, and a combination of medical and farrier techniques, Pedal Osteitis can be resolved and most horses returned to athletic function.

The Key - Correcting the underlying condition that caused its development.