

Dorsal slab fractures of the third tarsal bone

Third tarsal bone dorsal slab fractures are a specific type of fracture that is most commonly observed in racing Greyhounds, primarily due to the extreme physical stresses placed on their hock (ankle) joints during high-speed racing and cornering.

Characteristics:

- Location: The third tarsal bone is a central weight-bearing bone in the hock joint, and a dorsal slab fracture involves a vertical crack or split on the top (dorsal) surface of the bone. These fractures are usually the result of chronic, repetitive loading and stress, rather than a single traumatic event.
- Greyhounds are prone: Racing at high speeds places excessive pressure on the hind limbs, particularly during turns, which stresses the hock joint. Over time, these repetitive forces can cause a stress fracture to develop into a dorsal slab fracture.

Clinical Presentation:

- Acute or gradual lameness: Dogs may present with sudden lameness after a race, or they might show gradual signs of limping or discomfort, particularly after periods of intense activity.
- Pain and swelling: The area around the hock joint may appear swollen, and the dog will likely experience pain when the joint is manipulated or touched.
- Performance decline: Racing Greyhounds often experience a decrease in performance prior to visible clinical signs, as the bone weakening impacts their ability to run effectively.

Diagnosis:

Veterinary examination of greyhounds with third tarsal bone fractures is often not sought at the time of the initial injury due to the benign presenting signs. Recurrence of lameness after rest is common. Examination may reveal pain on palpation over the dorsal surface of the third tarsal bone or mild swelling in the region of the third tarsal bone.

Radiographs (X-rays): Standard X-rays are typically used to diagnose dorsal slab fractures, showing a vertical crack along the dorsal surface of the third tarsal bone. These fractures may be difficult to detect early, so additional imaging, such as CT scans, can be helpful for more precise evaluation.

Diagnosis:

Surgical treatment involves placing a lag screw to compress the fracture. Conservative management with a splint or cast may be sufficient in some cases, particularly with an early diagnosis, although return to pre-injury performance is unlikely.

Outcome and potential risks of surgery

The prognosis for Greyhounds with dorsal slab fractures of the thirds tarsal bone treated surgically is typically reasonably good. However, while many dogs can return to racing, the healing process can be lengthy, and many dogs do not regain their prior level of competitive performance. Complete healing may take a number of months.

As with any surgery, complications may arise as detailed below, although serious complications are uncommon.

- The bone fragments are typically very small. There is a risk the fragment may fissure (split) as compression is applied with the lag screw. The risk is greater for a chronic fracture with remodelling of the fracture surfaces and resorption (demineralisation) of bone.
- Sometimes fractures heal very slowly (delayed union) or don't heal at all (non-union). This becomes more likely with chronic fractures.
- When the bone is in multiple pieces the pieces may be quite fragile e.g. there may be microfractures or even fissures in the individual bone pieces. Occasionally these bone pieces may suffer additional fractures during attempted repair. Bone in older dogs is more brittle and splinters more easily.
- Infection is a relatively uncommon complication as strict sterile technique is used during the surgery and antibiotics are administered during and potentially after the procedure, however surgery of the lower limb is at greater risk of infection due to reduced soft tissue cover and potential for contamination post-surgery. Should infection occur, early

detection and treatment often results in rapid resolution, although sometimes removal of the implants may be required once the bone has healed. More serious problems may occur if infection progresses untreated or if your dog suffers an infection that is resistant to multiple antibiotics e.g., MRSA. Some medical conditions will increase the risk of a post-surgical infection, such as diabetes or pre-existing infection elsewhere e.g., skin and ear infections, cystitis, gingivitis. Pre-existing infections should be eliminated whenever possible. Some chronic infections e.g., skin and ear cannot be entirely eliminated, yet it may still be in your dog's best interests to undergo surgery despite a degree of increased risk. Pre-surgical treatment will aim at minimising the risk of post-surgical infection.

- Excessive activity will reduce the likelihood of bone healing and will increase the risk of implant loosening/failure.
- Even after the bone has healed it is still important to have a controlled, gradual increase in activity, similar to human patients undergoing rehabilitation following surgery. If activity is increased too quickly after surgery straining of joint structures may occur. Rest and anti-inflammatory medications typically resolve these problems.

Postoperative care

A pad may be covering the wound at the time of discharge from the hospital. This can be removed after several days, or immediately if soiled. Medications e.g., Pain killers will be dispensed.

Ice packs may also be helpful in the days following surgery to reduce swelling and improve comfort.

Your dog should be kept confined to a large cage to restrict activity (a single room with **non-slip** flooring may be sufficient but with increased risk). Short **leash** walks in the garden (a few minutes four to six times daily) are recommended to allow toileting. Confinement should be maintained at all times for at least the first eight weeks following surgery; only relax confinement when your Vet specifically advises you to do so.

X-rays should be performed approximately **six weeks** following surgery to assess implant position and healing.

Implant removal may be advisable once the fracture has healed.

Declaration:

I have read the information contained herein and am satisfied I have a sufficient understanding of the procedures my dog is scheduled to undergo, including potential complications that may occur and requirements for aftercare following surgery.

I hereby consent for my dog to undergo fracture repair.

Owner's name:

Dog's Name:

Owner's signature:

Date: