Ask the physiotherapist

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Training for hunting on uneven terrain – an injury occurs, which structures are damaged?

Sprains, torn of ligaments, tendons or a fracture related to joints, forefoot, peripheral injury of the forefoot's bone (radius), near to the carpus (forefoot, wrist).

Sometimes injuries can be picked up that are combined and complex, I'm thinking about, for example, injuries to a dog's forefoot (radius) in the region near the carpus (wrist).

Purely diagnostically speaking it would be important to be able to make a precise diagnosis regarding what has happened, what injury the dog has suffered, which structures are involved and what type of injury we are dealing with.

Is more than one structure injured, has the dog suffered a fractured forefoot (radius), have structures such as ligaments and tendons been torn as well?

Sometimes it can be difficult to make a precise diagnosis during the acute phase of the injury if the condition is complicated by more than one component, for example more than just a fracture.

Swelling will often occur around the injured area, which makes it difficult to make a precise diagnosis during the acute phase (the same day).

Fractures (breaks) will easily show up on x-rays: with the help of x-rays one will be able to see the extent of the damage to the bone tissue.

Torn ligaments and tendons will be able to be diagnosed with the aid of, for example, ultrasound, event MR and other clinical examinations that involve functionality and stability tests on and around the joint.

Sometimes a fracture can be so fine (hairline fracture) that one can almost not detect it on an ordinary x-ray.

It can easily be overlooked and one will then not know that there is a fracture because the fracture surface is almost invisible.

The limp will continue as a symptom, due to the pain the fracture will cause over time.

In such cases an additional examination using an injection of a contrast fluid that is distributed through the bone can show up the fracture so it can be discovered.

Treatment of the fracture depends on the vet's assessment: cast, fixation with screws, plates or something else, as well as resting for 4-6-8 weeks depending on the complexity of the injury (fracture).

It is important that the bone is set in the right position in the cast or external fixation so that afterwards the mechanics of the joint are as correct and optimal as possible.

Some of the fixation methods permit loads. You will have to get more information from your vet about this.

After 4-6-8 weeks enough callus (growth material) should have formed that the bone will once again be able to tolerate a load, be used again for ordinary day-to-day functions.

One will probably have to reckon on some retraining time or a rehabilitation phase where one gradually gets the dog used to activity again and it gradually regains functionality and increases its level of activity depending on the condition it is in after the injury.

The rehabilitation phase is determined by pain and reduced functionality, i.e. is the dog limping, in pain, can it put a full load on it or just for a while at a time?

In any rehabilitation phase it will be right to progress gradually, i.e. apply the right length of time with respect to functionality, condition, what the dog can tolerate, when it appears to be in pain, and when it begins to limp gain.

If other symptoms appear in the clinic that indicate that other structures have been injured one must try to find out which as soon as possible and apply the correct treatment immediately.

The condition of a fracture can easily be complicated by torn tendons and possibly torn ligaments.

This will affect the dog's functionality and it will experience a changed functionality pattern and gait, as well as trot and run.

It is a good idea to bear this in mind since one may easily overlook these injuries and believe that it is just a fractured bone that will mend after the requisite number of weeks.

The symptoms of this can be a changed gait, changed trot and running patterns, play in the joint (carpus) between the forefoot and the wrist.

Over time this will cause biomechanical loads to be distributed incorrectly so an assessment must be made of the extent of the entire injury in relation to treatment.

Both tendons and ligaments that are torn off can be sewed together again so that normal function of the dog's extremities (foreleg, forefoot) can be regained or something at least close to what it was before the injury occurred.

The goal of surgery is to achieve as high a degree as possible of optimal function afterwards.

If one overlooks any of these structures that are injured this may result in lasting symptoms in the future, depending on the degree and complexity of the injury that has occurred.

It is important to seek vet help immediately after an injury like this has occurred, since the chance of complete and successful recovery is greater when the correct treatment starts quickly.

In some cases, physiotherapy treatment is indicated in the rehabilitation phase after a fracture injury, or ligament or tendon injuries.

Function:
This is to normalise functionality if functionality has changed, something one often sees after fracture injuries, to alleviate limping, a changed gait, trot and running patterns.

Pain:
Further pain alleviation treatment if there is residual pain in the musculature, joint, ligament, tendon tissue or surrounding tissue.

[Photo captions]:
Anatomical overview of dog's forefoot: radius, carpus, tendons and more
X-ray of the forefoot, fractured radius, postoperative x-ray images

Joint mechanics:
Sometimes one will also have to affect the joint function, i.e. the movement between two bones if this has been changed or reduced.

Biomechanics:
The biomechanics between a joint and bone are often a combination of a rolling and sliding movement. After fracture injuries and immobility one often see that the play in the joint has changed and one specifically has to manipulate it to normalise the biomechanics of a joint.

It is usually the sliding motion that is disturbed or disappears after a period of immobilisation with no load, cast or fixation, etc.

Rehabilitation phase:
During the rehabilitation phase the various deficiencies (reduced functions) are worked systematically, gradually and for the correct length of time so that the dog can regain functionality after a while without limping, pain or anything else due to rushing the retraining phase after such an injury that could be a combination of a fracture and a ligament and tendon injury.

Adjoining joints:
You must also check adjoining joints, bones, tendons and ligaments to assess whether other structures are injured.

Contact me:
If you have a dog with this type of problem following this type of injury please don't hesitate to contact me.

Good diagnosis – good recovery – good rehabilitation.

Happy hunting!

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