

PATELLAR LUXATION

What is it and how does it occur?

Patella luxation, otherwise known colloquially as “knee dislocation”, is a common condition typically affecting young small and toy-breed dogs. The patella normally lies in a groove (called the trochlear groove) but in luxation, it will move in and out causing pain and instability. This is often a developmental congenital defect. One of the causes is an abnormal shape of the end of the femur bone, leading to in a shallow trochlear groove such that the patella can slip out. The other major cause is a displacement of the quadriceps tendon’s attachment to the tibia bone, so that the patella displaces inwards when the quadriceps muscle is flexed. If the condition is genetic, both knees are typically affected. Blunt force trauma and obesity can also be predisposing factors.

How is it diagnosed?

During the physical examination, the vet might simply feel the knees and be able to manually push the patella out of place. Because cranial cruciate ligament ruptures occur concurrently in 15 – 20% of dogs, they might lie the dog on its side to test the stability of these ligaments as well. Radiographs can also be indicated in some cases to determine the degree of luxation, osteoarthritic changes, bony deformities, and suitability for surgical correction.

Treatment

Treatment in mild cases may include exercise restriction, non-steroidal anti-inflammatories (NSAIDs), “Zydax” pentosan polysulphate injections (usually one a week for 4 weeks, followed by repeat courses every 3 to 6 months), nutraceuticals & supplements (such as “Glyde”) and weight reduction in obese dogs.

If lameness and pain persists and becomes more prominent, surgery should be considered. Grade 3 and 4 patellar luxation typically requires surgical correction. There are many different approaches to surgery, which may depend on the patient, grade as well as the vet’s preference. The trochlear groove can be deepened to better capture the patella, the quadriceps muscle can be moved into better alignment, and sometimes soft tissue procedures can also be performed (where a releasing incision on the side of the joint and imbrication on the other side are done to reduce tension). If both knees are affected, surgery is often scheduled so that the dog has at least one ‘good’ leg to walk on while the other one is healing. Post-surgery, patients may need to be strictly confined anywhere from 4 to 8 weeks. Most dogs with grade 1 and 2 luxation should have a good to excellent return to normal function, however, those dogs with grade 3 and 4 luxation may still have a small possibility of relaxation. In general, however, recovery and prognosis is good.

Adapted from VIN, Miriam Yii 2016



Normal position of the patella in a lateral X-ray of the knee

A lateral X-ray of both left & right knees in a dog who has bilateral patella luxation

The tendency to luxate causes a transient lameness, at least until the patella returns to its normal position, if it is able to. The extent of patella luxation increases with time as the trochlear groove becomes flatter and flatter, as increased bowing of the leg takes place, and as the structures of the stifle joint weaken. Continued deformity of the joint results in degenerative joint disease, osteoarthritis, pain, and decreased mobility.

What are the signs?

Most dogs will show intermittent lameness. Often, such lameness is described as “skipping”, where the animal might hold a rear limb at an abnormal angle for a few steps before returning to a normal gait. If cartilage is abraded from the constant rubbing of bone on bone, the lameness and pain will be more severe.

Grading

We tend to grade patellar luxation based on severity:

Grade 1: The patella luxates with manual pressure and returns spontaneously.

Grade 2: The patella luxates with flexion and extension of the joint, but returns to the trochlear groove spontaneously. Some lameness may be present.

Grade 3: The patella luxates with flexion and extension of the joint, but can be reduced manually. Considerable lameness exists.

Grade 4: The patella is permanently luxated to the inner side. The limb or limbs are unable to extend and the animal walks balancing its weight on the forelimbs.