

Patella Luxation

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BASIC INFORMATION

Description

The patella is the kneecap. Patella luxation is dislocation of the patella from the groove (trochlear sulcus) in the femur (thigh bone) in which the patella normally rides. Patella luxation occurs most commonly in small-breed dogs but can occur in large dogs and cats. In most cases, the patella dislocates toward the inside of the knee (medial luxation), but dislocation toward the outside of the knee (lateral luxation) can also occur, especially in large dogs.

Causes

Patellar luxation is usually a developmental disease but can also occur as a result of trauma. Multiple causes have been suggested, including genetic influences. Several abnormalities can occur in the leg anatomy of affected dogs, beginning at the hip and progressing down to below the stifle (knee). The muscles of the legs may be malaligned and the major bones somewhat deformed. Patella luxation is the most obvious abnormality and the one that causes pain and dysfunction, but the other abnormalities must be addressed for the patella to properly ride in the trochlear sulcus.

Clinical Signs

The most commonly reported sign is a variable degree of intermittent lameness. Classically, the dog suddenly stops, may cry out, picks up the leg for several steps, stretches the leg out behind it, and then resumes normal activity. This sequence of signs occurs because the patella dislocates and then returns to its normal position when the leg is stretched backward. With time, the stifle develops osteoarthritis from abnormal movement of the patella.

Diagnostic Tests

The luxation can usually be detected during a physical examination, and other anatomic abnormalities may also be detected. The extent of the luxation is often graded on a scale of 1 to 4, as follows:

- Grade 1 is the mildest form. In these cases, the patella can be manually luxated during the examination, but then it returns to a normal position. Dogs with grade 1 luxations may have no clinical signs.
- With grade 2 cases, the patella spontaneously luxates and returns to its normal position. A “skipping” gait or lameness is common.
- With grade 3 cases, the patella is dislocated constantly but can be manually returned to a normal position momentarily. Lameness is commonly present but varies in severity.

- Grade 4 is the most severe form. In these cases, the patella is dislocated continuously and cannot be manually replaced, and lameness is significant.

X-rays may reveal the luxation, show other anatomic abnormalities in the leg, and help decide what specific measures should be taken to correct the condition.

TREATMENT AND FOLLOW-UP

Treatment Options

Dogs with patellar luxations that have no clinical (outward) signs (an uncommon event) generally do not benefit from surgery. Young dogs and dogs with patellar luxation and lameness should have the luxation corrected. A number of techniques are commonly used to achieve proper alignment of the patella. Which specific procedure is chosen depends to some degree on the x-ray findings and the results of the initial orthopedic examination. Your dog may be referred to a veterinary orthopedic surgeon for evaluation prior to surgery.

Techniques that may be considered include the following:

- If the trochlear sulcus is too shallow, it can be deepened by either a block or wedge recession trochleoplasty.
- In most situations, the attachment of the patellar tendon to the tibia (shin bone) is cut, moved laterally (toward the outside of the stifle), and secured to the tibia with a single, small, stainless steel pin.
- Dogs that have grade 4 luxations often require additional procedures to cut and straighten the femur (thigh bone) and tibia, thereby straightening the leg and resolving the luxation.

Follow-up Care

After surgery, activity is limited to short leash walks. Other activities such as running, jumping, stair climbing, and playing are prohibited. Physical rehabilitation therapy can greatly improve the recovery of stifle function. X-rays of the stifle are taken every 4-6 weeks until the osteotomy in the tibia is healed. The pin may be left in place indefinitely. Normal exercise and full activity are allowed after all tissues, including the bone, have healed.

Prognosis

Prognosis is favorable for most dogs. After surgery, about 25% of the dogs have an improvement in their luxation by 1-2 grades, with the rest of the dogs becoming normal. Dogs with grade 4 luxations often have a more guarded (uncertain) prognosis but can still improve substantially with proper treatment.