

Patellar Luxation

(Kneecap Dislocation)

Basics

OVERVIEW

- The “patella” is the kneecap; it is located at the front of the stifle joint; the “stifle” is the knee joint of the dog or cat—it is the joint between the large upper thigh bone (the femur) and the two lower leg bones (tibia and fibula)
- “Luxation” is the medical term for dislocation
- “Patellar luxation” is the displacement of the patella from its normal anatomic position in the groove of the femur (known as the “femoral trochlea”); the displacement can be to the inner side of the stifle (known as a “medial patellar luxation”) or to the outer side of the stifle (known as a “lateral patellar luxation”)
- One of the most common stifle-joint abnormalities in dogs
- Medial patellar luxation (that is, dislocation toward the inner side of the stifle)—greater than 75% of cases involving large and small dogs and cats
- Involvement of both kneecaps (known as “bilateral patellar luxations”)—seen in 50% of cases
- Uncommon in cats; however, may be more common than suspected because most affected cats are not lame



GENETICS

- Recessive, multiple genes (known as a “polygenic trait”), and multifocal inheritances proposed
- Hereditary factor in Devon rex cats

SIGNALMENT/DESCRIPTION OF PET

Species

- Predominantly dogs
- Rare in cats

Breed Predispositions

- Most common in toy and miniature dog breeds
- Dogs—miniature and toy poodles, Yorkshire terriers, Pomeranians, Pekingese, Chihuahuas, Boston terriers

Mean Age and Range

- Clinical signs—may develop soon after birth; generally after 4 months of age

Predominant Sex

- Risk for females is 1.5 times that for males

SIGNS/OBSERVED CHANGES IN THE PET

- Clinical expression depends on grade (severity), amount of degenerative joint disease (progressive and permanent deterioration of joint cartilage), long-term nature (chronicity) of disease, and occurrence of other

stifle joint abnormalities (such as cranial cruciate ligament rupture [partial or complete tearing of the cranial cruciate ligament])—signs range from mild to severe

- Persistent abnormal rear-leg carriage and function in newborns and puppies
- Occasional skipping or intermittent rear-leg lameness—worsens in young to mature dogs
- Sudden signs of lameness—owing to minor trauma or worsening degenerative joint disease (progressive and permanent deterioration of joint cartilage) in mature pets
- Pain—occurs as the kneecap (patella) moves in the abnormal position or if it contacts or rubs exposed bone
- May note bowing of the bones around the joint

Grades of Patellar Luxation

- Grade I—kneecap (patella) can be displaced manually from its normal location; but immediately resumes a normal position when pressure is released
- Grade II—kneecap (patella) can be displaced manually or can displace spontaneously with bending (flexion) of the stifle joint; patella remains in its displaced location until it is replaced manually or the pet straightens (extends) the stifle joint; pet intermittently carries the affected leg with the knee (stifle) joint flexed
- Grade III—kneecap (patella) remains dislocated most of the time, but can be replaced manually when the stifle joint is straightened (extended); movement of the stifle joint results in re-dislocation of the patella
- Grade IV—kneecap (patella) is dislocated permanently and cannot be replaced manually
- Grades III and IV—crouching, bowlegged or knock-kneed stance for medial (that is, dislocation toward the inner side of the stifle) or lateral (that is, dislocation toward the outer side of the stifle) luxations, respectively; most of the body weight is transferred to the front limbs

CAUSES

- Congenital (present at birth)
- Trauma (rare)

Treatment

HEALTH CARE

- Outpatient—all grade I and some grade II kneecap (patella) dislocations (patellar luxations)
- Inpatient for surgery—most grade II and all grade III and IV kneecap (patella) dislocations (patellar luxations)
- Ice packing (known as “cryotherapy”)—immediately after surgery; apply ice packs for 5–10 minutes every 8 hours for 3–5 days or as directed by your pet’s veterinarian
- Passive stifle range-of-motion exercises—as soon as tolerated

ACTIVITY

- Normal to restricted, depending on severity of kneecap (patella) dislocation (patellar luxation)
- Following surgery—encourage early, passive physiotherapy and ice packing, limit free exercise for the period determined by the surgeon; may include a period of kennel rest

DIET

- Weight control—decreases stress on the kneecap (patella)-support mechanism

SURGERY

- Various surgical procedures may be performed; type of surgery determined by anatomy of the stifle and the severity of the kneecap (patella) dislocation (patellar luxation); 8-20% of knees can re-luxate after surgery

Medications

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive

- Nonsteroidal anti-inflammatory drugs (NSAIDs)—minimize pain; decrease inflammation; examples include meloxicam, carprofen, etodolac, deracoxib
- Medications intended to slow the progression of arthritic changes and protect joint cartilage (known as “chondroprotective drugs”), such as polysulfated glycosaminoglycans, glucosamine, and chondroitin sulfate—

may help limit cartilage damage and degeneration; may help alleviate pain and inflammation—recent evidence suggests they are minimally effective

Follow-Up Care

PATIENT MONITORING

- Yearly examinations

PREVENTIONS AND AVOIDANCE

- Discourage breeding of affected pets
- Do not repeat dam–sire breedings that result in affected offspring

POSSIBLE COMPLICATIONS

- Recurrence of kneecap (patella) dislocation (patellar luxation) after surgical stabilization; usually of a lower grade than the original patellar luxation; pin migration if that technique was used for surgical repair
- Post-operative infection

EXPECTED COURSE AND PROGNOSIS

- With surgical treatment—greater than 90% of affected pets are free from lameness and clinical dysfunction
- Degenerative joint disease (progressive and permanent deterioration of joint cartilage)—x-ray (radiographic) evidence in almost all affected stifle joints after surgery; however, clinical impact appears minimal in small dogs

Key Points

- Congenital (present at birth) kneecap (patella) dislocation (patellar luxation) may have a genetic basis
- With surgical treatment—greater than 90% of affected pets are free from lameness and clinical dysfunction
- Potential exists for relapse following surgery; recurrence of patellar luxation
- Pets with patellar luxation may be at increased risk of cranial cruciate ligament disease (failure of the cranial cruciate ligament, which results in partial to complete instability of the stifle joint)
- Patellar luxation could worsen over time (such as from grade I to grade II)