d.c. Vets, inc.

Medial Patella Luxation

Kneecap Dislocation

Medial patellar (kneecap) luxation may be congenital (present at birth) or acquired. The congenital form is most common in toy and miniature breeds such as the Miniature Poodle, Yorkshire Terrier, Toy Poodle, Chihuahua, Pomeranian, and Pekingese and may occur simultaneously with other pelvic limb deformities. While the definitive sequence of events that leads to these deformities has not yet been established, the age at which the syndrome occurs does play an important role in the severity of the degenerative changes in the joint.

When patellar luxations are present early in life, the major muscle groups of the thigh pull toward the inside of the leg, putting abnormal pressure on the knee joint cartilage. The result is a bowlegged stance and an abnormal pull on the patella (see Figure 1 below). Thus, a number of anatomic pelvic limb deformities can result from the structural manifestation of medial patellar luxation. These include bowed legs (Figure 2), coxofemoral (hip) joint abnormalities, and outward rotation of the limb.

When the patella is in its normal position, its cartilage surface glides smoothly and painlessly along the cartilage surface of the trochlear groove with little or no discomfort. As the patella pops out of its groove, these cartilage

Figure 1a. Frontal view of normal left stifle (knee) showing ligaments, meniscus and patella (kneecap)

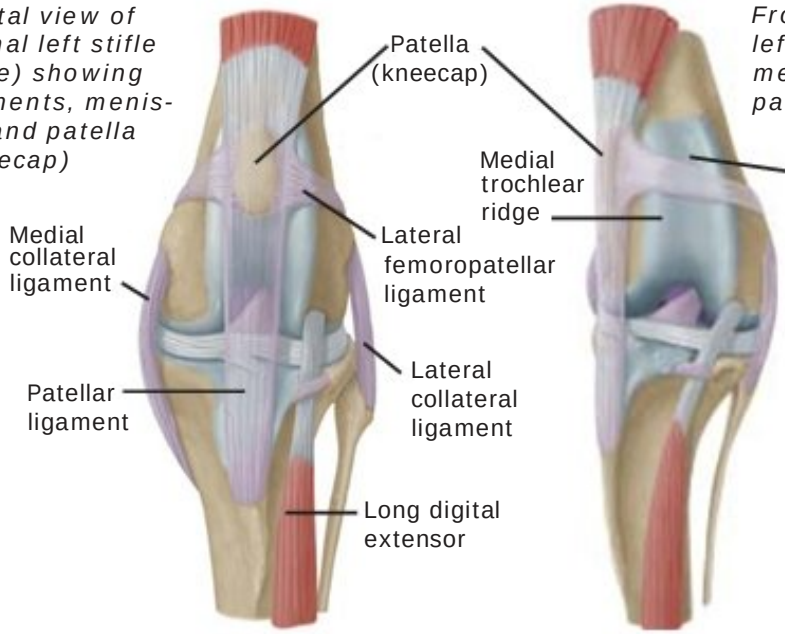

Figure 1b. Frontal view of left stifle showing medially luxated patella

Figure 1c. X-ray view of Figure 1b showing dislocated patella

Source of these images: *Pfizer Atlas of Common Painful Conditions in Dogs and Cats*, SA Johnston VMD and DN Biery, DVM, editors. Copyright 2003, Pfizer, Inc. Used with permission.

Figure 2a. Normal stance of rear legs

Figure 2b. Bow-legged stance resulting in medial patella luxation

surfaces rub each other. The animal may cry and try to straighten the leg to pop the patella back into position or may hold the limb up until muscle relaxation allows the kneecap to reposition itself. This resembles an intermittent lameness. There is little or no discomfort until the cartilage is eroded to a point where bone touches bone. From this point on, each time the patella pops out into its abnormal, luxated position, it will cause pain. This explains why many dogs have no clinical lameness until they reach adulthood when progressive cartilage wear creates an acutely painful condition.

Because there is great individual variation in the pathologic deformities seen, a graded classification of medial patellar luxation (Putnam 1968) has been formulated as a basis for recommending which type of surgical repair is most appropriate for each individual. In the following description each classification is addressed:

Grade I
The anatomic alignment of the stifle is normal with the patella luxating only when pushed out of the socket.

Grade II
The patella luxates upon flexion of the joint and remains luxated until returned by manual pressure.

Grade III
The patella is permanently dislocated but can be reduced manually with the limb extended.

Grade IV
The patella is permanently dislocated and cannot be manually reduced.

Treatment

The procedures for repair of medial patellar luxation deal with repositioning and stabilizing the kneecap in the patellar groove of the femur. Depending on the severity of the deformities, the technique may be as simple as soft tissue reconstruction or as complicated as multiple corrective osteotomies (straightening the bone).

The most commonly accepted surgical procedures include:

- Deepening the trochlear groove.
- Tightening the tissues around the joint.
- De-rotating the femur or tibia.
- Repositioning the patellar ligament attachment to the tibia.

Postoperative Care

After surgery is completed, the affected leg(s) may be bandaged for up to seven days. Passive physical therapy is begun immediately after bandage removal to work out the stiffness and

reestablish a normal range of motion in the joint. During the next three to four weeks, well-monitored light walking around the house or supervised short walks outside must be strictly controlled until a progressive building of muscular support and stamina leads to unrestricted normal function.

The Use of Elizabethan Collars

Your pet is being discharged with a plastic cone-shaped collar called an Elizabethan or Buster Collar (Figure 3). This collar has been provided for use during the recuperation period and plays an important part in your pet's healing capabilities.

The collar is designed to restrict your pet's ability to reach his/her incision are or bandage(s). Licking at an incision area may result in open wounds (granulomas) that can be difficult to treat. This collar has been provided to protect these areas and also to insur that proper healing is allowed to take place.

Although your pet may exhibit some strange behavior (such as pawing at or rubbing the collar, or walking into stationary objects), after the initial placement of the collar this behavior will usually subside after approximately one to two hours time. Contrary to what one might think, it is not beneficial to remove this collar. To do so only increases the time needed to become accustomed to wearing it.

Be assured that this collar does not constrict breathing passages when worn. The animal will be able to eat, drink, sleep and eliminate while wearing this collar. Typically, it will only remain in place for the duration of time that the surgical site is sutured or an area is to remain bandaged. We do suggest that once your pet may have this collar removed that you keep it for future use. It may prove to be quite beneficial in the future for aid in treating minor skin irritations, "hot spots," and so forth.

Figure 3. Elizabethan collar

Medicating Your Dog

1. When administering medication in capsule or tablet form to your dog, you may find it much easier to simply place the medication in a small amount of food and offer it as a treat to your pet.

2. If your dog will not accept mediation in the above mentioned fashion, it will be necessary for you to manually 'pill' your pet (Figure 4). Place your hand around your pet's upper jaw and gently apply pressure by pressing the lips against the teeth. Using your other hand, gently pull the lower jaw downward and place the medication in the very back of your pet's throat. By holding his/her muzzle and gently stroking the throat, you will stimulate your pet to swallow.

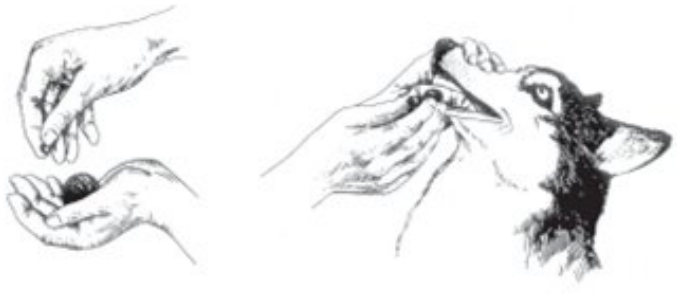

Figure 4. Administering medication to a dog

D. C. Vets, Inc.
Tommy L. Walker, DVM, MS, Diplomate, ACVS
website: www.dcvets.org email: info@dcvets.org
Offices
40280 Hurley Lane, Paeonian Springs, VA 20129
phone: 540-882-4666 fax: 540-882-4776

12106 Nebel Street, Rockville, MD 20852

(inside Metropolitan Emergency Animal Clinic, Inc.)
phone: 301-770-1260 fax: 301-770-1261