

MEDIAL PATELLA LUXATION

KNEECAP DISLOCATION

Medial patella luxation, or kneecap dislocation, may be *congenital (present at birth) or acquired*. The congenital form is most common in the 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 which leads to or allows 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 *bow-legged stance* and an abnormal pull on the patella (Fig. 1). Therefore, the statement "patellar luxation is an anatomic malformation not merely of the knee but of the entire pelvic limb"... accurately describes the complexity of a seemingly simple luxation. Thus, a number of anatomic pelvic limb deformities can lead to or result from the structural manifestation of medial patella luxation. These include bowed legs, 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 surfaces improperly rub each other. The animal may cry and try to straighten (extend) the leg to "pop it back in" 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 effectively "rubbed off" or 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 individuals have no clinical lameness until they reach adulthood. Often, progressive cartilage wear creates an acutely painful condition.

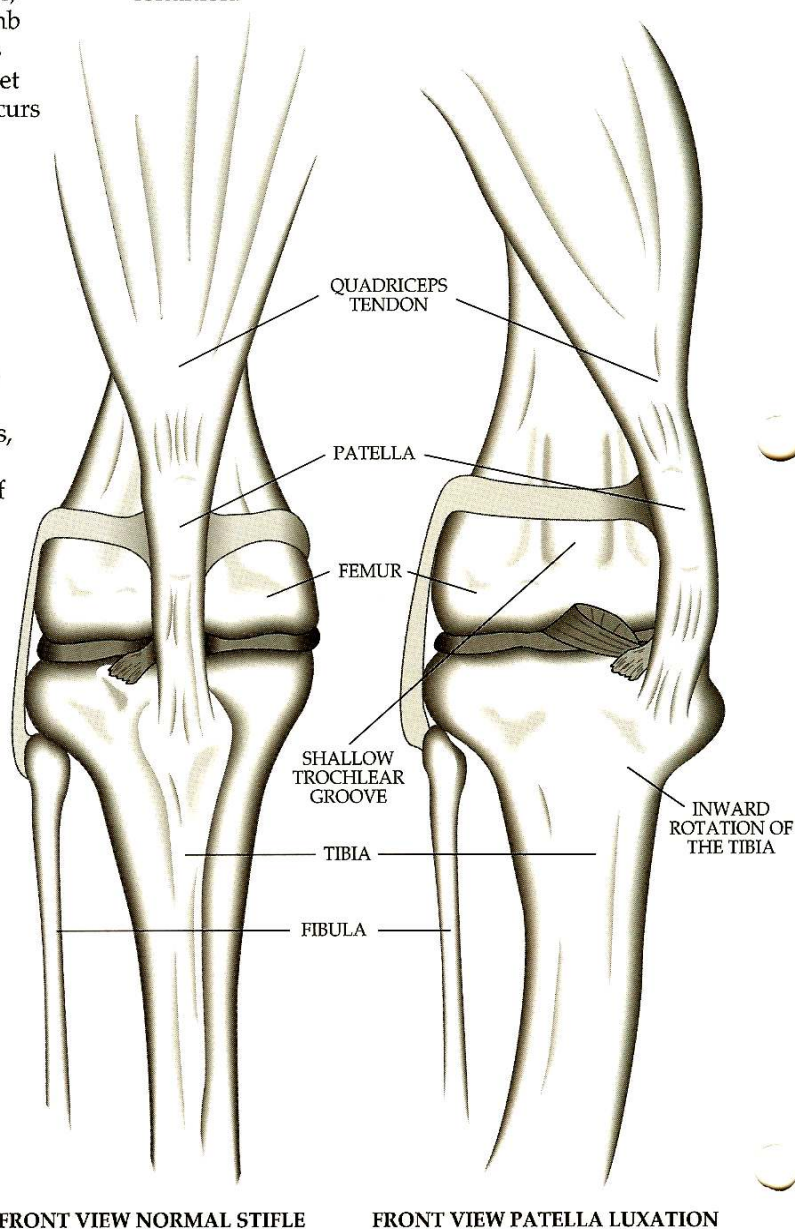


FIGURE 1

Because there is a great individual variation in the pathologic deformities seen, a graded classification of medial patella 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 knee is normal with the patella luxating only when pushed out of position.

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

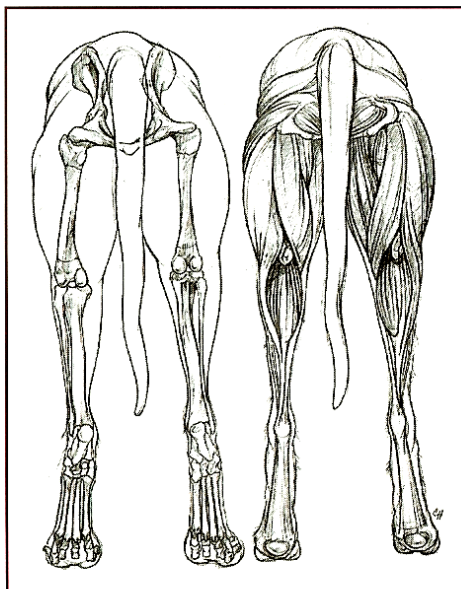
The patella is permanently dislocated and cannot be manually reduced.

■ POST-OPERATIVE CARE

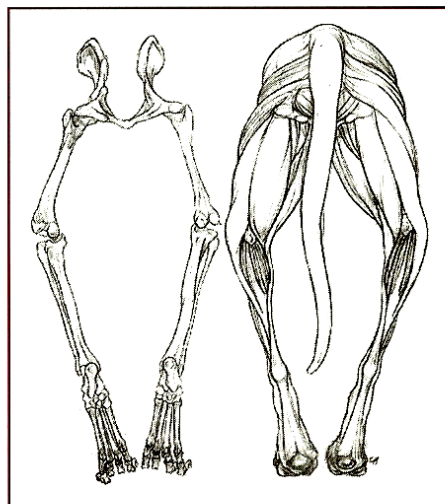
After surgery is completed, the affected leg(s) may be bandaged for approximately 3 to 7 days. Passive physical therapy is begun immediately after suture removal to work out the stiffness and re-establish a normal range of motion in the joint. During the next 3-4 weeks strict confinement is recommended. The second month after surgery will involve short leash walks followed by progressive building of muscular support with non-acrobatic activity. Unrestricted activity is usually permitted 2 months postoperatively.

■ TREATMENT

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



NORMAL STANCE ON THE REAR LIMBS



"BOW-LEGGED" STANCE RESULTING IN MEDIAL PATELLA LUXATION

The most commonly accepted surgical procedures include...

- 1) *Deepening the trochlear groove.*
- 2) *Tightening the tissues around the joint.*
- 3) *De-rotating the femur or tibia.*
- 4) *Repositioning the patellar ligament attachment to the tibia.*

Veterinary Surgical Services
215 Center Park Drive
Knoxville, TN 37922
(865)966-3920
Operative Report

Case Number: 4920

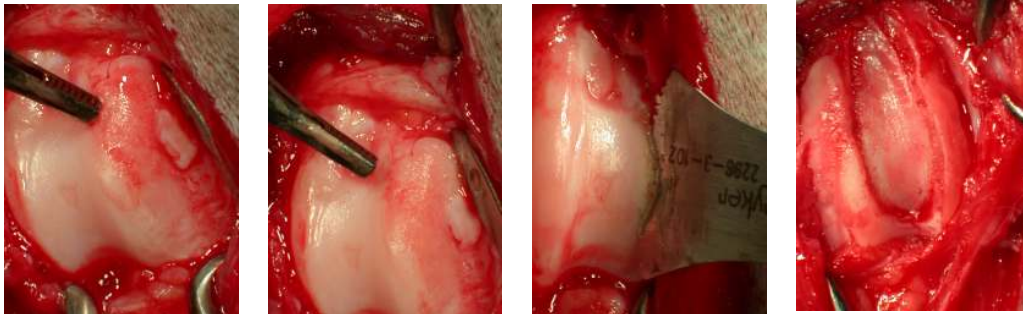
Referring Veterinarian: Dr. Somevet

Date: 3-21-05

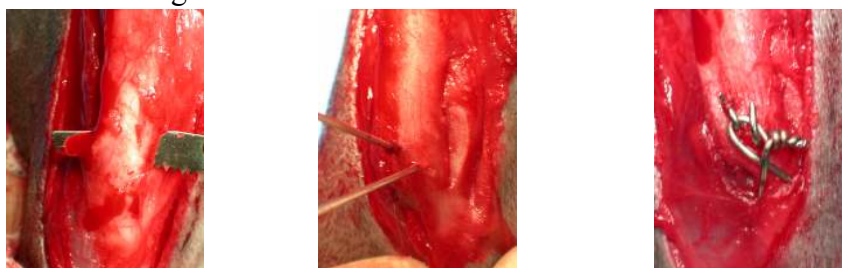
Patient Name: Jose

Pre Op Dx: Right medial patella luxation 4/4. Left patella is a 1 / 4. There is some crepitation when patella is manually luxated. All other parameters are wnl. IV Catheter placed. Cefazolin. 250mg IV. Rimadyl SQ. Fentanyl patch applied.

Operation in Detail: The dog was placed in ventral recumbency. The right rear leg was then shaved and prepped for surgery. A cranial-lateral incision was made on the lateral aspect of the right stifle joint. An incision was made in the distal, lateral aspect of the lateral biceps fascia. The mal-alignment of the tibial tuberosity was initially noted. Blunt dissection was used to separate the femoral biceps fascia from joint capsule. The joint capsule was incised along the lateral aspect of the patella and stifle joint. The cruciate ligaments and meniscus were all intact. Noted was the absence of a deep trochlear groove. There was a significant amount of loss of cartilage along the medial condyle. See picture. The mal-alignment was more evident. A trochlear wedge recession was performed. The joint capsule was closed using 3-0 PDS in a continuous pattern.



Next, a small reciprocating blade was used to separate the tuberosity behind the distal patella tendon distally along the tuberosity. Once the tibial tuberosity was separated, it was moved laterally till it was in normal alignment with the trochlear groove and the patella. A .063 K-Wire was inserted through the tuberosity to hold it in this alignment. A 22g wire was also applied to perform a tension band technique. Flexion and extension showed excellent alignment.



Next, an imbrication was performed by removing a 2mm fascia strip from the biceps fascia and then closing it using 3-0 PDS in a continuous pattern. The subcutaneous tissue was closed with 3-0 PDS in a continuous pattern. The skin was closed with 3-0 PDS in a simple interrupted pattern.



Post Operative Instructions: No running, jumping or playing for a minimum of 3 months. Suture removal in 10-14 days. Give antibiotics and analgesics as directed.

Please call if you have any questions or problems.

Mitch T. Rosenzweig, DVM