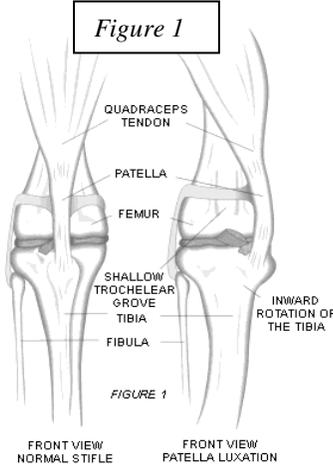


Postoperative instructions following stabilization of a luxating patella

The patella is commonly referred to as the knee cap. Animals have a patella which is a small bone incorporated within the tendon of the quadriceps muscles (the muscles on the front part of the thigh). The tendon from the patella crosses over the front of the stifle (knee) joint to insert onto the long prominence (cranial tibial tuberosity) just below the joint (*Figure 1*). The patella is very important in the normal function and mechanics of the stifle. It acts as a lever arm and pulley to increase the mechanical advantage of the thigh muscles when extending the stifle.

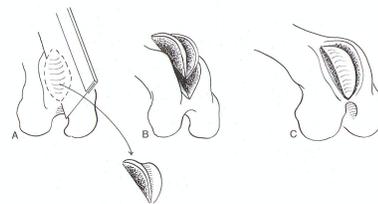


The patella glides in front of the stifle when the joint is flexed and extended. To help maintain a constant and straight gliding pathway, the patella rides in a groove of the femur called the trochlear groove. When the patella is displaced out of this groove, it is referred to as luxated (*Figure 1*). The permanency of the luxation varies from that in which the patella occasionally slips out of the groove to where it is always out of the trochlear groove.

When the patella luxates from the trochlear groove a variable degree of pain occurs and the patient may limp or show discomfort. Also the luxation may produce a give way feeling which will result in a limp. In addition to the clinical lameness, in the actively growing patient, the luxating patella may cause skeletal (bone) deformities (abnormal bowing or twisting). The degree of deformity is dependent upon the permanency of the luxation. The more time the patella is luxated, the more deformity that can occur. This is why we recommend early surgical intervention with a young patient that has a severely luxating patella. The cause of the condition in dogs is unknown.

Figure 2

The goal of surgery is to realign the extensor mechanism of the stifle and maintain the patella within the trochlear groove. The groove the patella rides in may be deepened with a trochlear wedge resection (*Figure 2*) and the patella tendon attachment site may be transposed (*Figure 3*) to correct stifle alignment.



Check the skin incision daily for signs of irritation or drainage. Skin sutures are removed 10-14 days following surgery. In 3-5 days following surgery, begin physical therapy on the affected limb. This physical therapy involves passive flexion and extension of the knee joint for 5-10 minutes, three times daily. Continue with the physical therapy until you pet is using the limb well. The patient may go outside to urinate or defecate, but only under supervision and on a leash for the first 4 weeks following surgery. Walking short distances is sufficient initially but the distance may gradually increase over the next 4-6 weeks.

The prognosis for your pet is generally very good. Occasionally relaxation will despite extensive reconstructive surgery. These are usually severe cases and one procedure may be necessary to stabilize the patella within the trochlear



Figure 3

occur more than groove.

PHYSICAL THERAPY REGIMEN

Our lives are often very busy, so if you must err, err on the "do less" side of these instructions. Less physical therapy will result in a slower return to function, but more aggressive physical therapy by a non-professional may result in failure of the procedure.

- Week 1
 - Apply an ice pack to the knee 10-15 minutes four times a day for the first 24-36 hours following surgery (if the bandage is not present). An ice slurry can be made by mixing 2 parts isopropyl alcohol to one part water in a zip lock bag and freezing. This is kept in the freezer except when in use. Use a towel between the skin and ice pack for comfort.
 - When swelling and redness have resolved (3 days postop), begin application of a warm compress (a damp towel warmed in water) to the knee for 10 minutes three times a day before performing 10 slow repetitions of range of motion (ROM) exercises.
 - ROM Exercise--Have your pet lie on his/her good side. Grip the front of the thigh with one hand and hold the foot with the other. Slowly push the foot up into flexion of knee and then slowly pull the foot and push the thigh down and back into extension of the knee. Concentrate on the extension movement. Flex and extend only to your pet's comfort limit. Do not go to the point of creating pain or resentment. Following ROM, apply ice packs to the surgical site for 10 minutes
 - After the third day, begin slow leash walks of 3-5 minutes duration three times daily. Use a short leash during the walks outside when your dog must urinate or defecate.
- Weeks 2 and 3
 - Apply the warm compress and continue flexion and extension of the knee as described above. Now slowly push the foot up into full flexion of all joints; hold for 5 seconds. Slowly pull the foot and push the thigh down and back into full extension of all joints; hold for 5 seconds. Repeat this motion 10 times twice daily. Again, do not go to the point of creating pain or resentment. Follow each session with 5-10 minutes of ice packs.
 - Slow leash walks for 10 minutes 1 to 2 times a day is acceptable.
- Weeks 4 and 5
 - Sit/stand Exercise (for dogs)—Have your pet repeatedly sit and stand for *10 repetitions twice daily*. Use small treats to encourage participation. Do not push down on his/her rump. Continue 4 weeks.
 - Massage—your pet may stand or lie down. Perform both superficial skin massage & deeper muscle massage. Skin massage around the knee joint involves using your hand loosely conformed to the surface of the skin; enough pressure is applied to move the skin relative to the underlying tissues. Muscle massage of the thigh and shin involves deeper kneading and pushing of the muscles. Perform massage for *10-15 minutes twice daily for 4 weeks*.
 - Increase the slow leash walks to 20 minutes 1 to 2 times a day.
- Weeks 6 and 7
 - Active exercise—Place your pet on a short leash and have him/her walk at your side. Walk outside on even/solid footing for *30 minutes once or twice daily*. Continue 4 weeks, gradually increasing time and distance.
- Weeks 8 - 10
 - At the end of week 8, the dog should be reexamined by your veterinarian for evaluation of limb usage.
 - Increase the slow leash walks to *30-40 minutes once or twice daily*. The pace should be slow enough to ensure full weight-bearing on the affected limb.
 - Have your dog slowly climb a flight of stairs 5-10 times twice daily.
 - Jogging exercise—On a short leash, intermittently jog and walk your dog for 10 minutes twice daily. Continue 4 weeks, gradually increasing time and distance.
 - Swimming is wonderful rehabilitation exercise when performed correctly. You may allow controlled swimming after week 8. Controlled swimming requires that your pet not jump or leap into the water; walking into the water until it is deep enough to swim is required. Throwing balls to fetch often results in sudden jumping and lunging, this can cause serious problems in the healing phase. Do not over extend you pet; start with short excursions (5 minutes) and increase duration and frequency gradually.
- Week 11 and 12
 - Light play exercise—On a long leash; encourage playing and romping with your dog for 15 minutes twice daily. Use toys for teasing and tugging. Continue 2 weeks.
 - Healing should be complete and your dog can return to full activity by the 12th-16th week.

LONG TERM LIFESTYLE

Following the 12 week recovery period, there are no recommended limitations to their lifestyle. A gradual return to full function should occur, to allow for a smooth transition back to normal activity. If stiffness and lameness develop over time, intermittent use of anti-inflammatory medications can help improve limb function. Occasionally the implants that were placed in your dog's knee will cause irritation and lameness. If necessary, these are easily removed once complete healing has occurred.

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