



the COVE connection

Surgery Case Study: Conformational Abnormalities

By Jeff Stallings, DVM, Diplomate ACVS, Brandy Sinclair, LVT, and Courtney Judson, Veterinary Assistant



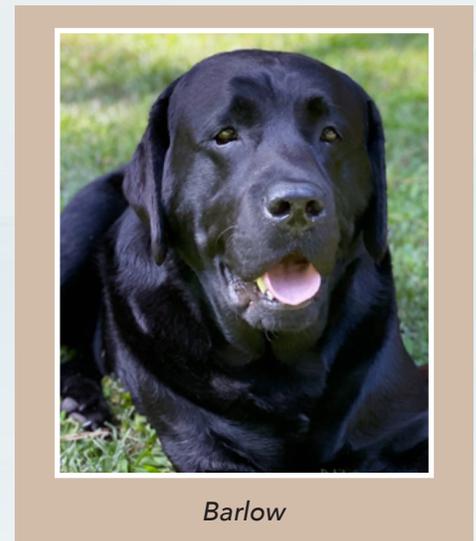
Patient: Barlow, 4-year-old MN Labrador Retriever

Referred by: Dr. Adrienne Koegal, Animal Medical Center of Virginia Beach

History: Barlow was referred to The COVE surgery service by his primary care DVM for a chronic right rear limb lameness of six-months' duration. A cranial cruciate ligament rupture with concurrent medial patella luxation was diagnosed upon evaluation by primary care. Carprofen and gabapentin were dispensed for pain management in the interim before Barlow's surgical consultation.

Presentation: Upon arrival to The COVE, Barlow was BAR and a lovely boy.

- Weight: 92.0lbs/41.8kgs (BCS 6/9)
- Temp: 102.7°F
- MM: Pink, moist
- CRT: 2 sec
- Heart Rate: 136 BPM
- Respiratory Rate: 40 BPM; clear breath sounds
- Ambulatory x 3, moderate weight-bearing to toe-touching lameness on the right rear limb
- Pain Score 1-2



Case Study: Barlow (continued)

Diagnostics and Lab Work: CBC/Chemistry/Lytes: WNL. We took radiographs of four views of the pelvis and rear limbs, which revealed increased synovial fluid volume, mild to moderate secondary degenerative changes, cranial translation of the tibia, and caudodistal displacement of the popliteal sesamoid bone associated with the right stifle joint. There was approximately 24 degrees of distal femoral varus. There were moderate degrees of secondary degenerative change and remodeling associated with the hips. The left stifle and hocks appeared to be radiographically WNL.

Based on the history, physical examination, and radiographic findings, Barlow was diagnosed with partial right CCL insufficiency, grade 3 MPL, and excessive distal femoral varus. Based on Barlow's size and expected activity level, we recommended a right TPLO/PCS +/- distal femoral corrective osteotomy as the best surgical treatment option. He was scheduled for surgery, and Barlow's owner was instructed to discontinue NSAID therapy and to use gabapentin and activity restriction for pain management in the interim.

Surgery: Femoral and sciatic nerve blocks were performed following anesthetic induction. A distal femoral opening wedge, valgus, and derotational corrective osteotomy with patellar centralization and stabilization was performed. Subsequently, a right TPLO with medial meniscal release was done in standard fashion.

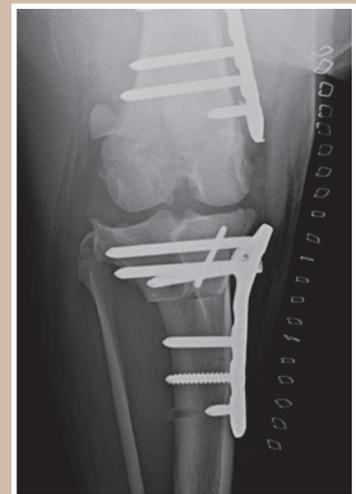
Outcome: Barlow had a smooth recovery and his limb function remained excellent throughout. The owners were mostly compliant during the healing phase, and Barlow healed per post-operative planned intention. After six weeks, Barlow was functioning well on the operated limb. Radiographs revealed complete bone healing at both osteotomy sites, and a centrally located patella. The stifle was supple and smooth through a normal range of motion. Cranial tibial thrust was well controlled. The patella was central and stable.

Discussion: Barlow's case is a good example of a patient with complicated stifle joint pathology accentuated by abnormal rear limb conformation. The combination of medial or lateral patellar luxation and CCLR in dogs is often associated with several concurrent conformational issues. In large patients, our standard surgical strategies are much less forgiving than in our smaller patients. Often, in order to achieve the best functional outcome in larger patients, the conformational abnormalities must be addressed in a way that restores a more normal limb alignment and encourages more efficient force transmission through the entire limb.

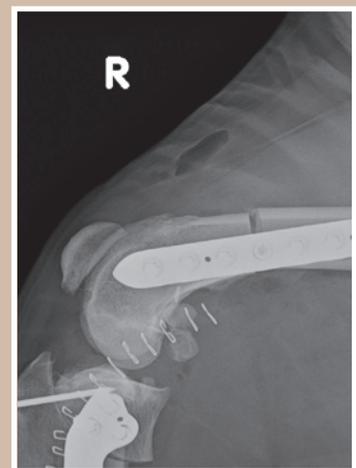
In Barlow's case, there was excessive distal femoral varus with mild external rotation, as well as mild tibial varus and internal tibial torsion. In large dogs, this constellation of conformational abnormalities



Mediolateral view of the right distal femur and tibia post osteotomies



Craniocaudal view of the femur post osteotomy



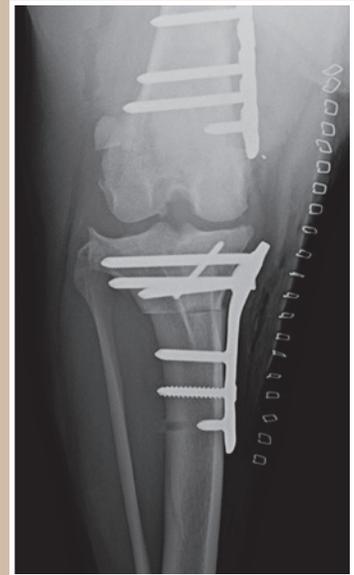
Mediolateral view of the right femur post osteotomy

(Continued on next page)

Case Study Discussion (continued)

predisposes to concurrent MPL in the face of CCL disease. Although CCL disease is thought to be primarily a degenerative process in dogs, the excessive internal rotary stress placed on the CCL in these patients could certainly be a contributing factor, or at the very least accelerate the progression of CCL failure. In Barlow's case, the restoration of limb alignment with traditional surgical treatment strategies ultimately led to successful management of the multiple stifle joint instabilities primarily responsible for his right rear limb dysfunction.

Additionally, with procedures that involve multiple osteotomies, there is an inherent risk of contracture of the muscles associated with the stifle if physical therapy is not pursued. Physical therapy is important following such an extensive procedure and should be started relatively quickly after surgery. Typically, passive range of motion exercises are instituted one week after the procedure. After radiographs confirm bone healing, it is recommended to pursue more advanced physical therapy techniques with a professional rehabilitation specialist.



Craniocaudal view of the right distal femur and tibia

Tech Tip: Soft Padded Bandages for Post-Surgical Healing



By Lilybeth Santiago, LVT

Soft padded bandages can provide support to a limb during ambulation and decrease swelling for patients recovering from surgical procedures. Stirrups also play a role in preventing the movement of the bandage.

If needed for a longer period, a great tip for technicians is to add Elastikon® elastic tape to the proximal and distal portion of the bandage. This helps avoid slippage and/or fraying at the bottom of the bandage.

Key points to remember:

- Make sure to use an adhesive remover and let it soak for a few minutes before removing the Elastikon, as it can irritate the skin.
- If there is swelling of the toes/toenails, the bandage becomes wet or develops an abnormal odor, or strikethrough is noted from the bandage, change the bandage immediately.
- For patient safety, remove the bandage in layers.



Did You Know?

Post-Surgical Compliance Tips for Pet Owners

By Autumn Revis



When it comes to surgery, the procedure itself is only part of the equation. Pet owner compliance with recovery instructions plays a huge role in the patient's prognosis. Here are a few tips to share with clients on keeping their pets safe and comfortable after an invasive surgical procedure.

- Make sure the pet has a crate big enough for them to comfortably move around in, even with an e-collar on.
- Always give medications prescribed by your veterinarian, so that pain is well managed. Even if your pet does not seem to be in pain, continue giving medications as prescribed to avoid pain.
- In their recovery space/crate, have a pillow, towel, or thick blanket for them to lie their head on.
- Add a few layers of comfortable blankets or a soft bed over the crate tray or floor, so that they are not lying on a hard surface.
- Make sure you have pee pads handy as well, just in case your pet has an accident. (This way it does not contaminate the surgical incision!)
- Keep a favorite toy or blanket in their crate so they feel more secure.
- Switch out blankets and towels frequently so that your pet can have fresh bedding.

News You Can Use

Post-Op Virtual Appointments Now Available

By Katie Allen



The surgery team at The COVE has recently started scheduling Zoom appointments with clients whose pets have undergone traumatic or more invasive orthopedic surgeries. Cases such as fractures, distal femoral osteotomies (DFO), TPLO, and limb deformities are potential cases that qualify for Zoom appointments.

These virtual appointments generally occur 7-10 days post-operatively and allow our team to observe the patient's ambulation from the comfort of their own home.

If there are instances where Dr. Stallings is concerned about how the patient is ambulating, this provides ample time for intervention. Most of the time, ambulatory evaluation at the two-week staple removal is too late to begin some modified physical therapy. Our Zoom appointments also allow the technician to assess the pet's confined space, incision, and e-collar to ensure an optimal recovery.

