



## Toy Breeds and TPLO

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### Case Summary

Mitey a 4.4 #, 6-year-old Yorkshire terrier presented to Colorado Canine Orthopedics (CCO) for a severe left rear lameness. Mitey had previously been diagnosed and treated elsewhere for a medial patella luxation (MPL) and an anterior (cranial) cruciate ligament (ACL) tear. The MPL was treated with a tibial crest transposition procedure and the ACL with a traditional lateral extracapsular technique (Figure 1). Mitey did well for a short while following surgery but soon significant lameness recurred.

At the time Mitey presented to CCO, she was toe-touching lame and had a positive left cranial drawer sign consistent with a complete ACL rupture. The patella was stable unless the tibia was rotated internally when testing for cranial tibial thrust. Radiographs confirmed cranial displacement of the tibia relative to the femur.

A revision surgery was planned to correct the ACL tear and stabilize the patella. Previous implants were removed and a lateral extracapsular suture technique was again utilized (Figure 2). Mitey did well initially but once again, developed



Figure 1: Initial Presentation

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*Continued...* **Case Summary**

a significant lameness 6 to 8 weeks after surgery. On re-examination the stifle was found to be unstable and subluxated which was confirmed radiographically (Figure 3).

Review of the case and radiographs concluded that the excessively steep tibial plateau angle (TPA) was more than a lateral suture technique could overcome. Thus, even though Mitey's size was a major consideration, a "mini TPLO" (Tibial Plateau Leveling Osteotomy) was recommended. Surgery was performed and a 36 degree pre-operative TPA was converted to 3 degrees post-op.

Mitey was recovered similar to a typical large dog TPLO surgery but given the complicated history, was rested more strictly initially than typical. Mitey did well and at 6 weeks post surgery was surprisingly nearly sound with stable implants and excellent alignment of the femur over the tibia (Figure 4). Three months after surgery Mitey was completely sound.

## Discussion

Early use of the TPLO for ACL disease was mainly advocated in large breed dogs, such as the Labrador. Later, after the TPLO became the "gold standard" surgery for ACL disease, smaller equipment and plates were developed and the procedure was successfully performed in small-to-medium sized dogs, such as the Cocker Spaniel, Welsh Corgi, and Sheltie.

As surgeons, especially those at CCO, experienced the positive outcomes of performing TPLOs in medium sized dogs, many began working on the technique in smaller and even toy breed dogs. However, many veterinarians still consider a traditional extracapsular technique to be an appropriate technique. Interestingly, toy and small terrier breeds commonly have TPA angles steeper than medium-to-large breeds. Thus, academically, these small toy and terrier breeds may benefit most from the TPLO technique. The main limiting issues in the past have been the small bone size, equipment limitations, and technical difficulty related to the surgery itself. However, today we now have appropriate equipment and skills to perform stifle arthroscopy followed by TPLOs in dogs as small as 3 kg.

That is not to say all small breed dogs need a TPLO and extracapsular techniques are inappropriate; some smaller breed dogs may do very well with a more traditional approach. That being said, complications such as those seen following Mitey's traditional repair are not uncommon. At CCO we have seen countless dogs in all sizes from giant to toy breeds with complicated recoveries following traditional techniques. Obviously this scenario is extremely frustrating for the veterinarian and client, costly for clients, and certainly debilitating to those dogs with continued pain, lameness, and stifle instability.

Ultimately, now more than ever, we recommend the TPLO procedure as our primary repair technique in toy and small terrier breeds. This is the technique we would use and have used on our own pets. At CCO we recognize more than one technique may work for canine ACL tears, but we have found the TPLO to be the technique that works well consistently, regardless of the age, breed or size of the patient. And yes, we have even performed feline TPLOs.

If you would like to discuss any orthopedic or spinal case please do not hesitate to call us. And if you would like to spend a day to see what we do first hand, please join us!



**Figure 2:** Traditional Revision Surgery



**Figure 3:** Traditional Revision Surgery Failure (TPA=36)



**Figure 4:** Six Weeks Post-Op TPLO (TPA=3)