

When a Yogi Breaks his Leg

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I knew something was seriously wrong, when I heard a crack and felt a fire spew from my knee. With my foot planted, my knee snapped back when someone fell on my leg. I was not able to put weight on my right leg. It did not take me long, being a physical therapist for 30 years, to know that I was in trouble [I self diagnosed a torn ACL ligament and a broken tibia]. The x-ray tech at the emergency room confirmed that I indeed had broken my tibia [shin bone.] The orthopedist diagnosed a displaced fracture of the lateral, proximal tibia [outside, top shin bone], a depressed fracture of the tibial plateau [top], and probably ruptured medial collateral ligaments. He said it was the classic football clipping injury. I remembered the "Terrible Triad of O'Donoghue." This was a result of lateral [valgus] force applied to the side of the knee when the foot was planted. Typically the femur shears off the outside top of the tibia, then drives itself into the top of the tibia, and then ruptures the inside knee ligaments. I was a textbook case. He started to admit me for surgery, but thought better of it when he saw the arthrosis in my knee.

I had been a long distance runner [35 - 50 miles per week] for 10 years before yoga. I had 2 previous meniscectomies [removal of torn meniscus/cartilage] in that knee. Another 10 years of Padmasana [lotus] in Pranayama [breathing], Sirsasana [headstand], handstand, Kukktananasan [arm balance lotus variation], and Pindasana [shoulderstand lotus variation] did not help my medial meniscus. Because of a lack of protection from lack of cartilage [medial meniscus], The joint surface of my shin bone was pressing against the joint surface of my thigh bone [tibia on femur]. This caused a wearing away, a degeneration, of the knee's joint surface called arthrosis. This was despite a year of a daily hip opening routine that eventually allowed me Yogadandasana [foot in the armpit pose.]

The orthopedist decided to refer me to the trauma knee specialist in his orthopedist group. I went home on crutches, with a knee immobilizer, a prescription for pain killers [hydrocodene] , and an appointment to see the trauma guy in 5 days.

I went home with my worst fears confirmed. But I was relieved to now know my situation, so I could begin my journey back into healing. I knew this injury was going to be my teacher for the next bit of time. When I first broke my leg, I was exploring what I could not do. Then I was able to start to explore what I could do after western medicine told me what structural damage I inflicted upon myself. I used western medicine's splint and pain killers those five days before surgery. When I tried to reach through the center of my leg in a lengthening action, the energy stopped right at my knee. Energy would not go through my traumatized knee. At that point, I could only rest and elevate my swollen knee. It did not like movement between the tibia and femur, especially rotation. A friend lent me two different Nikken far infrared and magnetic wraps that I wore all of the time. The far infrared heat was soothing, as well as reducing the inflammation; therefore the swelling, along with the magnetic field therapy.

The trauma guy did not expect that someone with my diagnosis was so minimally swollen, five days after the injury. He had decided to operate on me the next day, given that I was ready for surgery and he had an opening.

After scurrying around [on one leg] to complete all the presurgical procedures in one afternoon and the next morning, I was admitted at noon the next day.

My orthopedic surgeon had explained that he needed to screw a plate into the side of my tibia after realigning the displaced part in line with the rest of the tibial plateau. He might have to put "rafter" screws just below the tibial plateau to shore up the top of the shin bone that had been crushed downward as a depressed fracture. He said he did not have to do anything with the probably ruptured medial collateral ligaments because "They would take care of themselves".

From the experience of rehabilitating after my previous knee surgeries, I knew Hatha Yoga was my way back from the trauma of the injury as well as the trauma of the surgery. I knew that improving just strength and flexibility was not enough. I looked at redeveloping the skill of lengthening and eventually grounding in the context of total body movement. I knew that

attention to my groin, belly / pelvis, spine was integral to my rehabilitation. I knew that more energy, more life force extending through my leg was healing. By the day of surgery, a trickle of energy was moving through my knee through the bottom of my foot. I was extending in inner and outer spirals through the ball of my big toe and through my inner and outer heels, while on the operating table as I was going under anesthesia.

I awoke in a thick fog in the recovery room with a morphine drip and a very bandaged leg in a metal brace from hip to foot. My wife said I was difficult to arouse, and very "out of it". They finally moved me to the orthopedic wing in the hospital at 10:30 that night. I vaguely remember pulling out my IV [attached to the morphine drip] in the middle of the night. They had to reinsert the IV in the early morning hours. When I awoke the next morning, I finally saw my leg in bandages and brace. I could move my foot in all directions. I could amazingly extend through my heel and for the first time press the back of my knee on the roll underneath it, without hurting. It hurt to flex [bend] my knee. I was pulling on the 17 metal stitches diagonally down the outside of my knee. I sat up on the side of my bed to go to the bathroom, when, to my surprise, my knee flexed as the brace had a hinged joint that was not locked. This scared me more than it hurt. I used a walker, with my Foley catheter and morphine drip attached, to walk to the bathroom. It wasn't bad. I had balance [a little woozy], even while under toe touch weight bearing orders for my right leg.

My doctor visited that morning to report everything went well in the two hour surgery. He placed the latest and greatest alloy plate with self locking screws to shore up my tibia. He did not have to reinforce the tibial crest because of the depressed fracture. It was small enough that he just removed the piece that was depressed. He said as soon as the physical and occupational therapist cleared me, I could go home.

The therapists came around 11:30 am. The PT got me back on my Lofstrand [forearm] crutches. These were the crutches I used for my other surgeries. Any PT knows that forearm crutches are much better than axillary [armpit] crutches. I knew this even before PT school from my father, a below the knee amputee from World War II. These crutches are extensions of your arms to bear weight, as compared to collapsing your body weight into your armpits with the other kind of crutches. The PT made me walk up and down 4 flights of stairs to convince him I was ready to be discharged. I did it. I was exhausted and sore in the front of my knee, but ready to be discharged.

My wife brought me home at 2:30 PM with my brace, crutches and a Percocet prescription. By my doctor's order, a Continuous Passive Motion [CPM] machine was delivered to my house, not long after we got home. I fell in love with this device. I had it placed on this very long sofa where I did most of my convalescing. I took off the brace so I could rest my leg in these two sheepskin slings, with straps across my thigh and ankle. The design was such that my tibia would not rotate on my femur at all, since my foot was fixed in the deep set slings. The brace did not prevent torsion since my foot was not fixed in the brace. It only controlled flexion and extension [bending and straightening]. The CPM machine would rest my leg at any angle of knee flexion. It would straighten and bend my knee in any range and at five different speeds. I soon found the gentle movement of my leg, flexing and extending, as soothing, yet energizing. As I played with the speeds and range of motion, I would start slow with little range and gradually increase both the speed and range. I began to extend through my long leg as the machine extended my leg. I would let my leg go, and receive flexion during that part of the cycle. I would stay in the CPM for hours. I would use an image of extending through the leg and then surrendering to the flexing motion. That first session was about 3 hours but this soon extended to five or six hours, twice daily.

I felt it was important to let my leg go, to rest in several positions in the CPM device in the aftermath of hours of the flexion / extension motion. I was excited to discover that I was increasing my knee extension by pushing into the bottom of the device through my ball and my heel. I began to press down into the thigh sling, as I extended through my heel. This allowed me to begin to extend the knee straight enough, that there was a long line of energy finally lengthening my right leg. At first I used my hands to place the leg on the vertical while lying on my back, then I would extend my leg, keeping it in an anti-gravity position. I started with rolling the ball of my belly [navel down and perineum up]. I would move from this roll of my belly, from

the naval down to the perineum up the back of my legs to the vertical. I could keep my leg lengthening and light as long as I did not veer too far off the vertical. Because of the front stitches and all the trauma from surgery, toning the quadriceps [front thigh] and groin muscles pulled on very tender, inflamed tissue. Extending from the back of my leg from my belly, softening my groin and quad, allowed me to bring length and life to my leg, relatively pain free. I became more and more proficient at scooping my leg upward from angles further and further off the vertical. When I started from deep in my belly, as I was exhaling, I eventually could pick my leg off the CPM machine to the vertical in a few days. I had to keep avoiding grabbing onto the front muscles of the thigh and groin as that was easy to do in a less conscious movement. I was gaining the skills of letting go and moving my leg with extending and not splinting. This was very important because I used this skill to bring life into my leg all of the time. This life is energizing, is healing.

My low back had started to ache even on pain killers from all that sitting and lying around in spinal flexion. When a lumbar spine rounds or flexes [vertebral bodies nutate while the sacrum counter nutates] the disks are pinched by the vertebral bodies in the front to bulge out the back. This bulging irritates the soft tissue and nerve roots in the low back causing pain and inflammation. The muscles start to react with increasing tone and eventually spasms. My back was getting tight. But lying over round bolsters crosswise and lengthwise was helping, balancing the flexion with some extension. I even set my bolster under me while I was flexing and extending in the CPM device.

During those first few days, I knew I had to get off my back, out of sitting and onto my stomach. Prone was a spinal extension and would be such a relief from the stress of compressive spinal flexion. This meant I had to move my leg onto the floor, straighten it enough to lie on my stomach.

In supine, I moved my spine along the bolster, pelvis on the floor and a roll under my knees. These passive backbends would press into the back muscles to release their increased tone, as well as, nutate and translate the vertebral bodies forward, taking the anterior pinch out of the disks through this posterior force. To counter this chest opener, I would then roll my belly, naval down / perineum up into extending my leg to the vertical while flat on the floor. From here, I began to separate my legs into the Supta Padangustasana series [reclining big toe stretch with a belt]. I could still extend through my leg even though it lacked about 10 -15 ° of full knee extension.

On the second day home, I also sat upright in Upavista Konasana [open angle pose] with a roll under my knee. Here I began to ground the back of my legs into the floor, as I was extending out through the length of my legs. I would spiral inwards, down in the floor with my inner leg and out through my inner foot. I would spiral outwards, releasing the top outer groin [hip] down towards the floor as I would extend out beyond my outer foot. In the next days, I began upright twists, forward bends in the middle and over either leg, and forward bend twist in Upavista Konasana. I kept developing the skill of grounding my legs without engaging the surface muscles of the groin, thigh, and top ankle.

In those first few days, I would lie on my back and attempt to flex my knee. The pull on the stitches on the front of my knee kept me flexing very gradually. At first, I had to keep my fist in the back of my knee to prevent from flexing too much. This combined with the flexing and extending in the CPM device increased my range.

My sitting meditation was difficult. It was not just the difficulties in sitting relaxed and upright in a chair. The narcotics were doing a number on my ability to focus, to attend to the breath. I struggled through 10-15 minutes in those first sits.

I started taking the homeopathic remedy Calcarea Phosphorous for knitting bones. I continued to use the magnetic and far infrared wraps to reduce the inflammation, allowing me to work my leg more.

When I went for my one week post op visit to the orthopedic surgeon, they removed my metal stitches. He was expecting about 30 - 40 ° of flexion. I had 110 °. I lacked about 10 ° of knee

extension to neutral. I saw my first X-ray after surgery. I had to remind myself that the plate and screws were not that big, since X-rays magnify the size. But 7 long screws attached this \$2200 "L bracket" to my tibia. And this doesn't include installation fees. He mentioned that I could be full weight bearing in 6 weeks because this new design had self locking screws. He ordered me to only toe touch weight bearing on that right leg and to see him at 6 weeks post op.

During the second week, I kept up the passive and assisted movements for hours in the CPM machine. I started to stabilize my right leg externally rotated on into the floor in 90 degrees of flexion while sitting on that right hip. Here is where I first felt my inner knee and supposedly my ruptured medial collateral ligament. I mildly felt the inner knee in Virasana approximations, where I assumed I would have felt the ligament strain. To my confusion, I felt more pain when I shortened the ligament sitting in the hip opener position [external rotation]. This allowed me to sit and bring my left leg on top of this right leg. Or I could extend the left leg back into lunge with the right leg in a hip opener. I finally could go prone from the hip opener lunge to prone on elbows to Bhujangasana [cobra.] I was so relieved to move my sacrum into my pelvis from prone after much too much spinal flexion stress of prolonged sitting and supine positions. Perineum and outer thighs releasing downward and sacral rocks [one side of sacrum at S/I joint moving into body] combined with inner thighs, groins, and pubis lifting up from grounding top feet activated the backbend energy up my spine.

I knew I had to wean myself off the narcotics. I started to reduce my pain killers the second week. I made several miscalculations when increasing the interval between doses. Then it took a long 45 minutes for the Percocet to take effect. I was cleansing my liver with Milk Thistle, Sarasparilla, and Artichoke. I was driving with my left foot and cruise control that third week. I decided I could start back teaching my yoga classes once off the narcotics.

Teaching classes on crutches required some creativity, three weeks post op. I had always felt strongly that I couldn't ask my students to do anything I could not do. I needed to demonstrate poses. I set the room so I had a chair on both sides, and a mat and bolster up front. My sequences were essentially my practice at that point in time of my recovery. Bolster work, Supta Padangustasana series, Jathara Parivartanasana [supine straight leg twist]. A series started in Upavista Konasana, then twisting into hip opener lunge to Rajakapotasana prep [pigeon pose prep] to Gomukasana to Victor's lotus. Then a prone series began with Bhujangasana, moving to Salabasana [locust pose], then to down dog [I did a one legged dog pose.] My mobility was hampered, as I clanked around the studio on my crutches. My adjustments were very limited.

Teaching seemed to accelerate my healing. My practice expanded, exploring the limits of my range and skillful movement. I remember being totally engrossed in the subtle or gross movements continually. I had to be mindful of simply moving at home and at my studio to protect my leg from excessive weight bearing. It seemed I was either resting / sleeping in my CPM machine, on the floor exploring supine, prone and sitting vinyasa [series of movements.], or clanking around on my forearm crutches.

Inversions were next. I had been doing Viparita Karani [leg up wall, low back elevated on bolster] the first week. But I then moved into Sarvangasana [shoulder stand]. Half handstand [with my right leg raised to the vertical.] A week or two later I was into full handstands and Sirsanana [headstand]. Inversions along with seated forward bends were added to my teaching the second week back.

Next was all fours with a blanket padding my shin. The suture line needed padding, the swelling in the back of my knee allowed just so much movement into flexion. Of course down dog and all the one legged variations were easy to flow into from all fours. While the leg was back in a lunge, I would bring a straight right leg out into a "half Upavista Konasana" or a twist called Dying Warrior with the straight leg across to sit on that hip. Eventually Hanumanasana [forward split] flowed from the dog pose vinyasa. While still with the back leg in lunge, I could do the flexed knee variations of hip opener and Rajakapotasana prep. This prone vinyasa was a mirror image of the Supta Padangustasana series on my back.

Still glaring was no standing poses. I could only explore a left legged Tadasana [mountain pose.] While holding onto a support, I would play in Vrksasana [tree pose] and Hasta Padangustasana. My sacro-iliac joints amazingly stayed calm during all of this. I had some S/I dysfunction in the past, but not this time around. I guess all of the forward bends and sacral rocks in cobra and twists kept the sacrum floating freely enough in my pelvis.

In my fifth and sixth weeks post op, I found that I then could do Uttanasana [standing forward bend] by leaning left, and by leaning onto my hands. This lean led to walking my hands forward into dog pose. I was starting to tread into unexplored territory . I was bearing more weight than toe touch. But after all, I was to be allowed full weight bearing in a week [6 weeks post op] was my rationalization. Permitting Down Dog was probably not a question, my orthopedist had ever entertained, so I went by intuition. I was confronted constantly by the fear of my displaced piece of tibia slipping up into the knee joint. My doctor said this uneven joint surface would guarantee a total knee replacement after the uneven joint surface tore up my knee. Six weeks was almost here. I was more than ready.

I even returned my CPM rental. I found myself less and less in the CPM. I was constantly moving my leg in any and all movements.

At my 6 week post op visit with my doctor, I was sitting with a bolster and blanket between my sit bones and heels in Vajrasana [thunderbolt pose] He said that his wife, also a yoga teacher, had been telling him that yoga was good for rehab. He said maybe he believes her now that he has seen my progress. He asked in passing, if I wanted any physical therapy. I respectfully declined. I was thinking this would be "too little, too late." I could not image starting physical therapy, at six weeks post op. I had been doing my physical therapy all along in the guise of Hatha Yoga. He then dropped the bombshell, telling me that the standard protocol was twelve weeks non weight bearing after a tibial plateau fracture. He allowed me fifty pounds of weight bearing. I was crushed. I had even planned a Vipassana meditation retreat for the next week.

I went to my retreat on crutches. Walking meditation [mindful crutch walking] was interesting. By the end of the week, I was exploring standing poses, grounding mostly through my left leg when it was either front or back. I used a folding chair seat, and the crutches to take some of the weight off my right leg. Also dog pose to lunge variations could be added if I kept most weight on my hands when the right leg was forward. My sitting meditation progressed to Siddhasana with props under my sit bones and right thigh.

I placed my right leg on a weighing scale in Virabhadrasana 1 and 2 [warrior 1 and 2,] Trikonasana [triangle], and Parsvakonasana [lateral flank], as front and back leg. I could not get the weight under 50 pounds, it was usually 75 - 100 pounds. My intuition was telling me my leg would be fine if I grounded skillfully with centering and lift. My friends and the fears given to me by my doctor kept reminding me of the worst case scenario. After all, it was just a few more weeks to twelve weeks.

Back from the retreat, classes, practice, and day to day life progressed. The swelling continued to reduce. Still I used the magnetic wraps, still I received the many wonderful movements of energy, movements into my resistances, movements of the breath. These were truly gifts bestowed upon me. I did not have to ask.

I remember the doctor finally granting me permission to bear full weight 12 weeks post op. The X-rays showed a perfect alignment along the tibial plateau. The standard was met. I was free to do as I pleased.

I went to another week long meditation retreat the following week. During my 12 weeks of minimal weight bearing orders, I had trained myself not to ground through the ball of my right big toe, during midstance and not to push through during the push off phase of late stance. This made sense, since I was ordered not to even push or ground through any part of my foot. 50 pounds is hardly pushing. With the mindfulness of walking meditation, I gradually brought back the ground and push off through that ball of my big toe. This was without any arbitrary strengthening exercises. This reinforced my paradigm of posture and movement. As a physical

therapist, I was trained to look at range of motion and muscle strength to deduce gross motor function, and rehabilitation from there. As a yoga student, I realized that consciousness and skill of movement incorporated so much more than range and strength. I went so far as to question what is "strength". Is it some arbitrary push or pull into some device measuring pounds of pressure exerted. I choose to think that gross motor function comes from the awareness of sensation, image, and intention as movement of energy. The direction of this energy is from our center down in the grounding into the earth and outward and upward into the space around and above. The result is posture or movement with momentum upright, forward or backward .

I proceeded to put my mind into grounding my big toe ball and heel in stance. I weight shifted onto the right leg, grounding from my center, rising upward and pushing off forward in walking. Yes I am sure muscles were activated, [even stronger by some people's paradigm] but so much more. I gained the confidence to "stand on my own two feet". This is a metaphor for the human lot of connecting earth to heaven through our human form. In nondualistic terms, I was extending into the space below my feet and extending [lifting] into the space above my head. My awareness allowed me to consider the space all around as my experience. There is just grounding, centering, and rising. This paradigm may be too lofty for some. But most will agree the walking is a motor skill. To walk symmetrically with confidence, ease, and grace is optimal movement behavior. Different paradigms dictate different views on how to accomplish this.

I used a paradigm that incorporates Hatha Yoga to rehab my broken leg after surgery back to graceful, fluid movement, [even functional by western medicine's paradigm]. This injury was my teacher. It laid down the context for my journey to continue.