

# ACPAC Lecture Cases

## Case 1: Low Back Pain

**Chief Complaint:** Intermittent low back pain which interferes with sleep, ADLs, and ability to work

**Social history-**45-year-old male pharmacist, divorced, father of 2 (school aged children).

**History of present illness-**Sudden onset low back pain 3 years ago without traumatic incident (was mopping the floor, twisted & felt immediate pain). During this first episode and after a few weeks, the pain began radiating down his leg. The pain lasted approximately 6 months and then gradually improved and essentially resolved. Then, over this past year his pain has come back especially over this past 6 months, without a specific incident. He notes that in the last 6 months his right leg feels very sensitive. Sometimes he has difficulty wearing denim because the material feels painful against the lower leg and still back dominant. He did not have any bowel changes. He thinks his weight is stable or perhaps a 5 lb weight gain. Sleep has been OK. Wearing tightly tied shoes also irritates the right foot. He also notices the pain seems to be spreading, previously, 3 years ago, the pain was only in the back of the right calf and now it sometimes feels as though the outer thigh and outer lower leg hurts. He is up once a night to urinate a few times a week.

### **Pain History:**

**Location: (P1)** Lumbar spine, radiating generally to lateral gluteal region and lateral hip bilaterally.

Radiates to right calf & ankle (**P2**) periodically (5-6 episodes/month). Has pain occasionally shooting across dorsum of left foot seemingly at random.

**P: Provoking factors:** Twisting, bending, turning over in bed, sitting >1 hour, standing >1 hour.

**Relieving factors:** lying down, heat

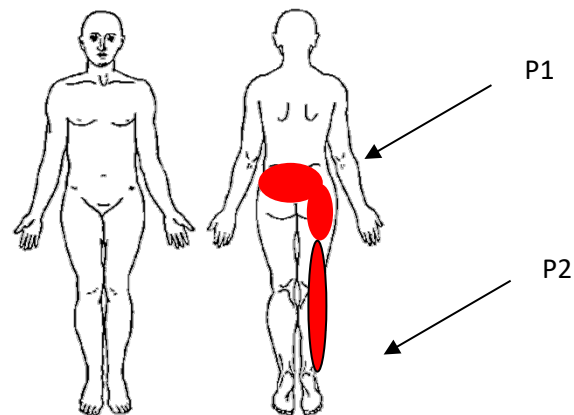
**Q: Quality:** P1 – Throbbing, aching, sharp around the back, P2 – burning and tingling, episodic shooting

**R: Radiation:** P1 radiates to the lateral gluteal and hip region

**S: Severity (NPRS):** ranges from 4-9/10, average 7/10

**T: Timing:** Pain fluctuates throughout the day, slightly worse towards the end of the day. Wakes at night occasionally when turning over and feels a sharp pain.

## Pain body diagram:



## Further biopsychosocial patient interview:

Since I injured my back 3 years ago my “back keeps getting weaker”, the pain has stayed the same. “I must have a slipped another disc” and I guess it’s never gone back in, and I think my sciatica is bad because of that. My “back seizes” when I get tired or twist the wrong way, probably because I have a weak back. “My back is deteriorating. One of my providers told me I have the spine of a 70-year-old. Wear and tear has destroyed my back so now I have pain. I have been told my gluts are not firing normally, that they are something like turned off so my back is extra vulnerable”.

I know I need to push through it, but the pain can get so bad that I have to lie down. I get my kids to unload the dishwasher now because I just can’t without inflaming things. When I’m in pain I just like to be left alone.

My pain is so bad when I work 8 hour shifts, so I’ve started to get people to cover for me. I can’t afford to work less than full-time though so I need to get better fast

I have a disc bulge, I guess it’s never gone back in, and I think my sciatica is bad because of that. My back seizes when I get tired or twist the wrong way. I have a weak core – so my back is vulnerable. This is the new normal. I will have pain the rest of my life

I get easily irritated by my kids and my coworkers. I worry a lot about the future, what I will be like in 10 years, and how I can continue to support my kids

I’m divorced, 2 children (11 and 8), has lost both parents to cancer, limited social network. Reports depression has been stable on medication and subsequently stopped.

I’m “sick of this constant pain”, pain is difficult to tolerate through an entire workday of standing in the pharmacy

## **Treatment history:**

**Interventional:** none

**Pharmacological:** Low-dose opioids and over-the counter pain medications

**Physical:** Had PT, massage, chiropractic care on/off since the initial injury 3 years ago, and now he has been less active, not doing the preventative exercises and has not sought out therapy recently

**Psychological:** None

## **PMHx:**

- Depression - resolved
- Sleep Apnea (uses CPAP)
- Past smoker (quit 1 year ago)
- Bilateral hip bursitis - resolved

## **Medical Imaging:** MRI lumbar spine (2016)

- Mild degenerative changes to the facet in keeping with normal findings for age
- Small disc herniation at L4/L5 level causing mild left sided narrowing at neural foramina and a L5 radiculopathy. Clinically this resolved with conservative mgt in 6-12 months.

## **Physical Exam:**

- Dermatomes and myotomes are normal
- Normal reflexes
- Hyperalgesia with a pin and allodynia with light touch, in a vague location nor dermatomal, and no specific peripheral nerve and almost the entire leg from hip to foot
- Negative SLR
- Reduced lumbar spine flexion & rotation (~50% of normal range), with guarding and report of increased pain with repeated movements
- Pain hurts with all lumbar spine movements (flexion is the worst). Some pain with hip internal rotation in the groin region (right greater than left). This is not his main pain
- Weakness with right > left hip abductors, external rotators due to pain
- Increased tone to right paraspinals; taut and protective spasm with light pressure
- Tender to rt. Piriformis, glut max and med, right quadratus lumborum
- Tendency to hold breath and brace abdomen with moving (sit to stand, turning on the bed, lying down)
- Maintains lumbar lordosis while sitting, lying, forward bending and lifting

## **Self-report validated measures:**

Pain Catastrophizing Scale-Total = 16/52

Tampa Scale for Kinesiophobia = 39/64

## Case 2: OA Knee

**Chief Complaint:** Knee pain x 15 years

**History:** 58-year-old mother of two adult children in their 20s. She is married and works as an executive assistant in a busy office. She has been experiencing knee pain for about 15 years, when she injured her MCL and meniscus while skiing. At that time, she saw a physiotherapist for about 6 months and was able to regain full range of motion and good return to function. She has always enjoyed staying physically active with step and yoga classes, and skiing in the winter. In the last year, however, her knee pain has returned. On questioning by the clinician, there is no Hx of Locking, or giving away. She does find that her pain is worse going down stairs.

She is not sure what caused it to start hurting again; she recalls “tweaking” it one day while hiking on a trail, but it did not really start hurting until a couple of weeks later. At the time, she was experiencing a lot of stress while caring for her ailing mother.

She went to her family doctor, who referred her for an X-ray. The X-ray showed mild degenerative changes, and some narrowing of the joint space. The doctor guessed that there might be some soft tissue damage as well and referred her for a consult with an orthopaedic surgeon. This was concerning to her, and she cut back on a lot of her activities. She has gained about 12 lb. this year and has increasing difficulty with her daily tasks. At first, she just slowed down on step and cardio classes because her knee would hurt her with some of the movements, but over time she has noticed pain just when walking to the subway, walking her dog around the block, standing in her kitchen doing the dishes, and doing light housework such as sweeping and vacuuming. The pain used to only be on the inside of the knee joint, but lately she has been feeling pain in her thigh and hip, and sometimes even in her foot and in her lower back. It hasn’t gotten any better with rest or using her TENS machine at home. She is feeling worried, anxious, and sad about the pain in her knee that is stopping her from doing the things she enjoys.

### **P: Provoking factors:**

- Walking too long (tolerance varies from about 5-15 minutes)
- Descending stairs
- Twisting/lifting her leg (getting in/out of car)
- Standing in one place (i.e. doing dishes)
- Housework (i.e. vacuuming)
- Lifting/carrying any amount of weight
- Lack of sleep
- Sometimes completely random, when resting no particular trigger
- Sometimes so sensitive that even having the blankets touch her leg hurts

### **Relieving factors:**

- Sleeping, but sleep is disrupted and can’t find a comfortable position

- Heat/massage/TENS/ Advil and Tylenol used to help, but in the past couple of months none are helping at all

**Q: Quality:**

- Mostly a strong ache; constant
- Feels like being bruised all over
- Sometimes sharp/stabbing, throbbing
- Sometimes unbearable

**R: Radiation:**

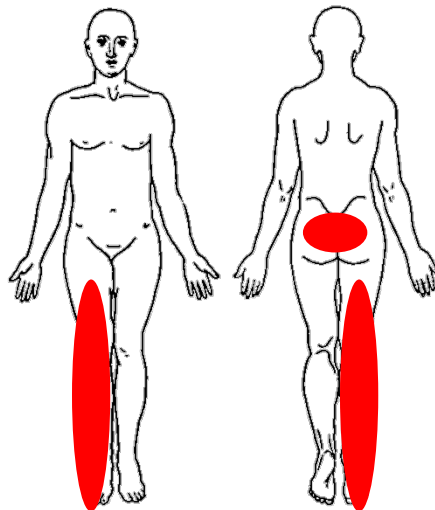
- General area around the knee; all around (diffuse)
- Calf, shin, and front or back of thigh; sometimes all these areas, and sometimes moves around
- Back aches and throbs when knee is worse; can radiate across low back

**S: Severity (NPRS):** Ranges from 8.5 to 12/10.

**T: Timing:**

- Started after the ski injury 12 years ago but was very mild for about 10 years until pain inexplicably worsened without new incident. The past year in particular has been the most severe it's ever been
- When pain increases from "overdoing it", it can stay severe for 3-4 days and cause severe limitations in activity

**Pain Diagram**



### Further Biopsychosocial patient interview:

-My cartilage is probably a mess in there. I know I have some wear and tear in the knee and it must be at the point of bone-on-bone. The doctor said there's some bony growths in there so that's probably grinding off my meniscus and pressing on the nerves

-One of my friends tore her meniscus, and she walks with a cane now. She is going to have her knee replaced and can never run again

-I'm going to end up in a wheelchair if I'm not careful

-I wish I could get into the surgeon sooner. If they could just fix the meniscus or inject it with painkillers, I could probably feel good enough to get back to normal

-I can't do anything at all. I can't really get comfortable at all but the closest I can get is to just lie on the couch and take a few Tylenol or Advil

-Sometimes I push myself because, no pain no gain, right? But then I'll have to spend the whole next day in bed.

-I have had to cancel plans with friends because I just can't stand the pain when it's bad

-I'm afraid if this gets any worse, I'll have to go on disability. I've called in sick a few times, but I don't have many sick days left

-The doctor said my meniscus is probably torn and there's extra bone growing, so the bones are probably rubbing. I think it's arthritis and I know that doesn't get any better with age

-My physio used to use a TENS machine and some other machines and did some massage. It fixed the problem last time but this time it's not working

-It feels terrible, I'm really frustrated that I can't do any activity anymore. I'm gaining weight and can barely even look after myself and the house, let alone my family

-Sometimes I cry because I try to push myself and it always feels so much worse afterwards

-I don't even feel like myself anymore

-My husband is usually helpful and does extra lifting for me, but I don't like to ask him to do too much. I don't like appearing weak

-Sometimes he gets frustrated with me because I can't stay out for very long when we go out with friends. I've started saying no to a lot of invitations because I just can't stay long

-Work is hard because I sit most of the day, and if I sit with my leg bent for more than 15 minutes, it starts to pain me.

-I'm so distracted by the pain that it's hard to focus on work. I don't feel like I can be relied on

### **Treatment history**

**Interventional:** Awaiting appointment with Orthopaedic Surgeon

**Pharmacological:** Advil, Tylenol

**Physical:** TENS, heat, massage; Physiotherapy at the onset of pain 15 years ago

**Psychological:** None

### **PMHx:**

Frequent headaches, Polycystic ovarian syndrome (PCOS)

### **Medical Imaging:**

X-ray of her Right knee showed mild degenerative changes, and some narrowing of the joint space

### **Physical Exam:**

- **Observations** (no redness/normal colour, tense posture, increased weight-bearing on unaffected side, absence of swelling, frequent rubbing of leg, shifting position, prior to a difficult physical task (manual muscle testing) she tenses her muscles and during the activity she holds her breath.)
- **Lumbar/lower quadrant screen**
  - Myotomes (general, mild, non-fatigable weakness to L2, L3, L4, S1 myotomes, with some aggravation on resisted testing for all)
  - Sensory testing (Light touch, pinprick, temperature; all increased sensitivity.)
  - Reflexes (normal bilaterally for patellar, medial hamstring, and Achilles)
- **Range of motion** (Pain before end of physiological range in knee flexion, hip rotations. Knee flexion 110 deg, extension lacks 5 deg (active vs passive), hip flexion 100 deg. Right side within normal limits)
- **Palpation** (joint line tenderness over the medial and lateral compartments, small effusion, crepitus felt on the patella, normal temperature, diffusely tender to the lower extremities, especially around the knee, including posterior knee, medial & lateral sides, patella and patellar tendon, quads, proximal calves. No palpable Baker's cyst)
- **Special tests** (pain even while assuming test positions for McMurray's, unable to perform Thessaly's)

### **Self-report validated measures:**

Pain Catastrophizing Scale = 40/52

Tampa Scale for Kinesiophobia = 44/64