Sacroiliac Joint Pain and Dysfunction: a Forgotten Cause of Low Back Pain

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Introduction

Although most doctors are very familiar with herniated disc or spinal stenosis as causes of low back pain (LBP), some may not be familiar with sacroiliac joint (SIJ) dysfunction as a cause of LBP. In fact, some studies maintain that up to 25% of low back pain comes from the sacroiliac joint. However, due to the lack of effective and long lasting treatments in the past, along with controversy about the SIJ being a cause of LBP by various pain experts, SIJ pain as a cause of LBP has been neglected.

Fortunately, there has been rapid progression, especially in the last few years, on the treatment of this less known cause of LBP. In fact, there are long lasting treatment advances both in the interventional pain management and surgical fields.

In my pain practice, the SIJ as a cause of LBP is part of my differential diagnosis of many patients presenting with mechanical LBP. My routine examination of the LBP patient includes inspection of the SIJ.

Anatomy

The pelvic area includes the wedge shaped sacrum, a combination of 5 fused sacral vertebrates. The sacrum connects with the 5 lumbar vertebrates superiorly and coccyx inferiorly. The whole weight of the upper body is transferred from the sacrum to the ilium via the sacroiliac joint to the lower body. The SIJ is the largest axial joint in the body. The SIJ itself is a true synovial joint, with encapsulated synovial fluid, adjacent bones connected by ligaments, and surfaces that allow a small amount of motion. However, the SIJ is generally made for stability. There are multiple ligaments that hold the adjacent bones together to give the SIJ stability.

The SIJ is commonly innervated by L4, L5, S1, S2, and S3, although there are variants in many individuals. It is these variations that make diagnosis and treatment of SIJ pain so difficult.

Common Causes

Although most cases of sacroiliac joint dysfunction or sacroiliitis are due to **osteoarthritis** of the joint, some classic injuries leading to SIJ pain include falling on the buttocks, heavy and/or prolonged lifting and bending, motor vehicle accident, and repetititive motions sustained in sports such as figure skating or golfing.

Interestingly lumbar surgery such as lumbar fusion can itself create SIJ pain. It makes sense, as fixation of the lumbar spine causes more movement of the SIJ and pelvic girdle, thus stressing the SIJ further.

Pregnancy is another time in which SIJ pain increases. Physiologically, during pregnancy because of hormonal changes, the woman's pelvic girdle is made more mobile due to relaxation of ligaments and connective tissues in preparation for childbirth so that the baby can pass through the birth canal. Unfortunately, this relaxation of the pelvic girdle increases the like-hood of sacroiliitis and sacroiliac joint pain. There are specialized supportive belts, sometimes called "Trochanteric Belts" or "Sacroiliac Belts," that can be used to alleviate some of the pain.

Symptoms and Signs

Pain from the SIJ is often confused with lumbar herniated disc, spinal stenosis, facet disease, and even sciatica. Furthermore, many times, patients have these other concomitant conditions, further confusing the diagnosis. Classically, SIJ pain is localized to the buttock area, and may radiate down the thigh to the knee, as well as the groin and hip regions. However, there are rare instances in which the pain radiates down to the leg and foot and is even associated with numbness and weakness, similar to sciatica or lumbar radiculopathy. It is common for the patient to complain of pain in the buttock and in fact, may prefer not to sit on the affected side.

Physical Examination

There are numerous physical exam maneuvers to diagnosis sacroiliac joint pain, but none are very specific or sensitive. There are too many tests to review in this short article. In a busy clinical setting, a "good test" for SIJ pain may be as simple as asking the patient to point to the pain with one finger. This is called the Fortin's Finger Test and the result is positive if the finger is within 1 cm of the posterior superior iliac spine (PSIS).

The clinician can also confirm by palpating the SIJ and asking the patient if that is painful. In my experience, most patients with sacroiliac joint pain will let you know instantly when you palpate the

affected SIJ.

Another common and relatively simple test to perform is Patrick's Test or the "FABRE" sign, in which the patient affected SIJ is tested by having the hip **F**lexed, **AB**ducted, externally **R**otated, and **E**xtended. This test is commonly performed by me in the pain clinic. Unfortunately, if the patient has hip pain or trochanteric pain, they may also have a positive response.

Differential Diagnoses

As mentioned earlier, hip and trochanteric related pain can mimic sacroiliac joint pain and vice versa. Other less common pathology to rule out include pelvic fractures, infection, spondylarthropathies (e.g. Rhematoid Arthritis or Ankylosing Spondylitis), tumors, and of course, lumbar herniated disc, lumbar spinal stenosis and facet DJD can all have the same pain distribution.

Definitive Diagnosis

Usually, imaging studies, including X-rays, CTs and MRIs are not helpful and a waste of medical resources and money. In fact, up to 25% of asymptomatic persons may have positive findings of SIJ degeneration on CT scan.

Many pain management specialists and anesthesiologists believe that the **best way to diagnose and treat SIJ pain** is with one or more diagnostic intra-articular injections directly into the sacroiliac joint under fluoroscopic guidance using contrast dye. Generally, most clinicians favor a combination of local anesthetic and a long acting steroid. The local anesthetic would afford immediate relief, which is the diagnostic component. The steroid effect will afford long term relief (e.g. months to even years), which is the therapeutic component.

At this point, most pain clinicians advocate injection of the SIJ under fluoroscopic or other imaging modalities (e.g. CT or ultrasound). Fluoroscopic guidance is most often used because it is relatively inexpensive and many interventional pain doctors are well trained in its usage. The joint is too deep to be properly injected using anatomical landmarks or palpation techniques. Most "blind" injection techniques will lead to ligamentous, muscular, and/or myofascial injections only.

Treatments

In terms of treatment, SIJ pain follows the same algorithm used for most other causes of mechanical low back pain.

Conservative treatment with a combination of NSAIDs and perhaps a muscle relaxant, as well as physical therapy, is the initial treatment plan. Physical therapy emphasizes strengthening and

stabilization of the pelvic girdle as well as the lumbar spine and lower extremities. Postural and gait abnormalities are also diagnosed and corrected by the physical therapist, as they often cause or contribute to SIJ pain. Ice or heat may also be used.

When conservative treatments fail, the next step is diagnostic and therapeutic intra-articular injections as detailed above.

If local anesthestic/steroid injection combinations are effective but short-lasting, there have been cases of radiofrequency ablation of the nerves innervating the SIJ. Usually, radiofrequency ablation is a neurolytic technique involving lesioning of the nerves at a high temperature (e.g. 80 degrees Celsius). To prevent lesioning of motor nerves and to confirm lesioning of the correct (painful) sensory nerves, both motor and sensory testing is performed before radiofrequency ablation occurs. Currently there is more than one company offering radiofrequency ablation equipment. However, because of inconsistent results and non-coverage by many insurance companies including Medicare, this modality has not been widely adopted by interventional pain physicians.

Until recently, surgical options have been limited. Traditional open surgery SIJ fusion involved a large incision and recovery was often 4-5 days post-operatively. The results were also not impressive. Traditional open surgery was reserved for intractable and disabling SIJ pain.

Currently, there is a new surgical fixation technology on the market, performed by local neurosurgeons and spine surgeons. It involves making a 3 cm incision and the surgical procedure lasts about 1 hour. Recovery is quick, as it can even be done in the same-day surgery centers. The technology, called "*I-Fuse*" and manufactured by *SI-Bone*, is relatively simple. It requires the surgeon to fuse the SIJ (ilium and sacrum) by placing 3 small rods via the 3 cm incision. According the company's literature, patients can weight bear on the affected SIJ at 3 weeks post-op. One criterion for this new surgical fusion technique is successful response to intra-articular injection first.

Conclusion

In summary, it is important to remember the SIJ when a patient presents with mechanical low back pain. The SIJ is a commonly overlooked cause of mechanical low back pain, although studies show that up to ¼ of low back pain may arise from the SIJ. Oftentimes, sacroiliitis or SIJ pain will not be the sole cause, but a contributing cause of low back pain, along with other more common causes (e.g. lumbar herniated disc). However, to give your patient optimal pain relief, it is imperative that you identify as many pain generators as possible. Fortunately, for the SIJ, the treatment options are better now than ever before.

References

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SI-Bone/I-Fuse Company Literature and Presentation (http://www.si-bone.com)