

Case Report

MUSCULOSKELETAL PHYSICAL THERAPY FOR SACROILIAC JOINT PAIN

Anas Alhakami^{*1}, Mohammed Qasheesh², Senthilkumar Cennappan Bose³.

^{*1} Senior Musculoskeletal Physical Therapist, King Faisal Medical City for Southern Regions, Kingdom of Saudi Arabia.

² Assistant Professor and Head-Physical Therapy, Jazan University, Kingdom of Saudi Arabia

³ Lecturer-Physical Therapy, Jazan University, Kingdom of Saudi Arabia.

ABSTRACT

This case report describes a clinical case of a 53 years aged male with Low Back Pain(LBP) at Sacro Iliac Joint(SIJ). Patient referred to physical therapy department with LBP over the past 3 weeks. Pain extended to posterior aspect of left thigh and worsening with prolonged standing, sitting and with stair climbing. Moreover, he found difficulty to ride his car or going from sit to stand. He had a history of road traffic accident 30 years ago that led to severe pain in his lower back area, he was a farmer as well and was working hardly more than 8 hours daily by lifting heavy objects. Patient came to the department by walking with assistive cane. By palpation, there was a local tenderness at the posterior aspect of the SIJ. Range of motion was limited by pain in lumbar flexion, extension, rotation and bilateral side bending movements. Pain scored 7 out of 10 on Numerical Pain Rating Visual Analogue Scale. Functional disability scored 19 out of 24 on Roland-Morris Disability questionnaire. Patient underwent special test of FABER, SLR and sacroiliac stress tests and Physical therapy modalities of TENS, dry cupping, myofascial release technique and manipulation, medical taping, hot packs applied before and after exercise. Stretching exercises included single knee to chest, trunk rotation, child's pose and stabilization exercises of bird dog pose, superman's, bridge, ball squeeze. Outcomes of treatment were assessed with same pretest measures. At the end of 3 weeks, patient improved in all symptoms of reduced pain to 2 out of 10 on Numerical Pain Rating, 3 out of 24 on Roland-Morris disability questionnaire. Post rehabilitative findings on all provocative tests were negative. Evidence on physical therapy management of patients with SIJ pain appears underreported. Patients presenting with SIJ pain should be routinely screened for sacroiliac component in LBP. Physical therapists are encouraged to report their findings so as to strengthen the evidence available for physical therapy for SIJ pain.

KEYWORDS: Diagnosis, Physical Therapy, Sacro Iliac Joint Pain.

Address for correspondence: Dr. Anas Mohammed Alhakami, Senior Musculoskeletal Physical Therapist, King Faisal Medical City for Southern Regions & Abu Arish General Hospital, Kingdom of Saudi Arabia. Mob: +966-594146435. **E-Mail:** alhakami.anas@gmail.com

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INTRODUCTION

LBP is a most common, frequently recurring condition that often has nonspecific cause in Kingdom of Saudi Arabia [1]. Most nonspecific acute LBP will improve within several weeks with or without any treatment. The diagnosis criteria

workup must focus on evaluation for evidence of systemic and/or pathological causes for the back pain.

Biopsychosocial distress, poor coping skills increases the risk for a prolonged disability in the course of pain[1]. All patients with acute or

chronic LBP should be advised to remain active in their daily functions. Treatment of chronic nonspecific LBP involves a multidisciplinary approach targeted at preserving functional activity and preventing the pain and disability. Surgical referral is indicated in the presence of severe or progressive musculoskeletal and/or neurologic deficits or signs and symptoms of cauda equina syndrome [2].

The SIJ is a bilateral, C-shaped synovial joint surrounded by a fibrous capsule and affixes the sacrum to ilia. Several sacral ligaments and pelvic muscles support SIJ [3]. The 5th lumbar nerve ventral ramus and lumbosacral trunk pass anteriorly and 1st sacral nerve ventral ramus passes inferiorly to the joint capsule. The SIJ is innervated by the dorsal rami of 4th lumbar to 3rd sacral nerve roots, transmitting nociception and temperature [4].

Injury mechanisms of SIJ could start from extra and intra articular causes, including muscular inflammation, capsular disruption, ligamentous tension, shear stress, bony fractures, arthritis and joint infection [4].

Patients could develop SIJ pain spontaneously or after a traumatic event or repetitive shear in SIJ. Risk factors for developing SIJ dysfunction include a history of scoliosis, lumbar fusion, leg length discrepancies, sustained athletic activity, pregnancy, seronegative HLA-B27 spondyl oarthropathies or gait abnormalities [4].

Inflammation of SIJ and surrounding structures secondary to an environmental insult in susceptible individuals is a common theme among these causes [4].

Pain in SIJ is localized to an area of approximately 3 cms * 10 cms that is inferior to the ipsilateral posterior superior iliac spine. Referred pain maps from SIJ dysfunction extend in the 5th Lumbar and 1st Sacral nerve distributions, commonly seen in buttocks, groin, posterior thigh and lower leg with radicular symptoms [5, 6, 7]. However, SIJ pain distribution demonstration intensive variability among patients and bears strong similarities to discogenic and facet joint sources of LBP [8]. Direct communication has been shown between SIJ and adjacent neural structures, namely the 5th Lumbar nerve, sacral foramina and lumbar plexus. These direct

pathways could explain an inflammatory mechanism for lower extremity symptoms seen in SIJ dysfunction [9, 10].

The prevalence of SIJ dysfunction among patients with LBP is estimated to be 15 to 30 percent, an extraordinary number given total patients presenting with LBP every year [11]. These patients might represent a significant segment of patients with an unrevealing standard spine evaluation. Despite the large number of patients who experience SIJ dysfunction, there is disagreement about optimal methods for diagnosis and treatment [3].

Pain originating from sacroiliac joint may also cause pain in the lumbar and gluteal region in 15 percent of population [12]. The clinical manifestation represents a public health problem due to the great implications on the quality of life and health related costs [13].

However, this is a diagnosis that is usually ignored in the general clinical practice; probably because of unknown etiology, making harder to rule out the potential etiologies of this pathology, or maybe because of the clinical criteria that support this pathology are unknown [14].

By describing several diagnostic techniques, many authors have studied the prevalence of this pathology, finding more positive data than expected; coming to the conclusion that even though there is no diagnostic gold standard yet, an important amount of cases might be detected by properly applying several special tests at physical examination. Thus, it is necessary to have knowledge of the physiopathology and clinical presentation so that diagnosis can be made to those patients that manifest this problem [12].

Physical Therapy

Self-mobilization exercises:Posterior innominate self-mobilization was done in a supine position. The patient grasped behind the flexed and gently moved it toward trunk. This exercise is to rock the innominate in a posterior direction.

Sacro Iliac Joint Stretches:These exercises were performed in both side lying positions, with the hip flexed 70 to 80 degrees and the flexed knee about 90 degrees. Patient's trunk was then rotated toward the upwards as far as to

the comfortable limit. Patient instructed to lift the top leg into hip abduction and internal rotation and resist the trainer force for 5 seconds. Patient instructed to breath in and out as the trainer gently over-pressured the trunk rotation. Patient then instructed to relax the hip and leg and allow the leg to drop toward the floor. As the patient relaxed, a gentle overpressure was applied to the foot as the patient was allowing the hip and leg to drop further to the floor. This exercise was done five session a day with two minutes of rest between sequences.

Spinal Stabilization Exercises:

These exercises were in four phases. Each new phase began every three weeks.

Phase 1:

- Supine abdominal draw-in
- Abdominal draw-in with one knee drawn to the chest
- Abdominal draw-in with heels sliding backward one after other
- Abdominal draw-in with both knees drawn to chest-supine twist
- Prone bridging on elbows
- Side bridging on elbows
- Prone cobra
- Quadruped opposite arm-leg lift

Phase 2:

- Abdominal draw-in with feet on the medicine ball plus abdominal draw-in with feet on the ball and with added movement
- Prone bridging on elbows with single leg hip extension
- Quadruped opposite arm-leg lifts, with cuff or dumbbell weights

Phase 3:

- Prone bridging, with the feet on the ball
- Side bridging with single leg hip abduction
- Quadruped opposite arm-leg lifts on "half foam rollers"
- Twisting while seated on medicine ball

Phase 4:

- Exercise performed dynamically that therapist threw a soccer ball size medicine ball to the patient who will try to stay in position

pertinent to exercises in phase 3. It's repeated 10 sessions a day.

CASE PRESENTATION

A clinical case of a 53 years aged male with LBP of sacroiliac joint pain referred to physical therapy department with history of pain for past 3 weeks. Pain description was, extended to posterior left thigh. Pain was worsening with prolonged standing and sitting and with stair climbing. Moreover, he found difficulty to ride his car or going to sit to stand with the past history of, had road traffic accident 30 years ago that led to severe pain in his lower back area. Patient was a farmer and he was working hardly more than 8 eight hours per day and by lifting heavy objects. Patient came to department by walking with cane assistance. By palpation, there was local tenderness of the posterior aspect of the sacroiliac joint. Range of motion was limited by pain at lumbar flexion, extension, rotation and bilateral bending. Pain was 7 out of 10 on Numerical Pain Rating Visual Analogue Scale and 19 out of 24 on Roland-Morris Disability Questionnaire. Patient tested with FABER test, SLR test and sacroiliac stress test. Physical therapy modalities of TENS (Frequency 100Hz and phase duration 200ms) for 20 minutes to reduce the pain intensity. Dry cupping along lumbar spine and buttock with myofascial release and manipulation. Hot pack applied for 10 minutes. Medical taping in order to reduce the pain, enhance muscle flexibility and mobility allowed. Treatment applied for period of 3 weeks. Stretching exercises that includes single knee to chest (3 sets / 20 sec hold), both knees to chest (3 sets / 20 sec hold), knees rotation to both sides (3 sets / 10 repetitions), child's pose (3 sets / 1 min hold) and stabilization exercises of bird dog pose (3 sets / 10 repetitions / 5 sec hold), superman's (3 sets / 5 repetitions / 5 sec hold), bridge (3 sets / 10 repetitions / 5 sec hold), ball squeeze (between knee) (3 sets / 10 repetitions / 5 sec hold). Outcomes of treatment were assessed using the same pretest measures. At the end of 3 weeks, patient improved in all symptoms of pain (2 out of 10 on Numerical Pain Rating Visual Analogue Scale), muscle weakness, muscle tightness, limitation in spinal movement and functional disability (3 out of 24

on Roland-Morris Disability questionnaire). Post rehabilitative findings on all provocative tests were negative.

CONCLUSION

SIJ dysfunction is widely overlooked because of the difficulty in distinguishing it from other similarly presenting syndromes. However, with a detailed history, appropriate physical maneuvers, imaging and adequate response to intra-articular anesthetic, providers can reach to an accurate diagnosis that will inform subsequent treatments. After failure of non-surgical methods, patients with SIJ dysfunction should be considered for minimally invasive fusion techniques, which have proven to be safe, effective and viable treatment option.

Evidence on physical therapy management of patients with sacroiliac joint pain appears under reported. Patients presenting with sacroiliac joint pain should be routinely screened for sacroiliac component in LBP. Physical therapists are encouraged to report their findings so as to strengthen the evidence available for physical therapy for sacroiliac joint pain.

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