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The Rehabilitation Of A 75-Year-Old Male Presenting With A Right Hip Flexor Strain Concomitant With Numerous Psychosocial **Factors: A Case Report**

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Abstract:

Background: Musculoskeletal disorders, often well understood, are a leading cause of disability worldwide. Concomitant psychosocial factors add a layer of complexity to the treatment of musculoskeletal disorders. The purpose of this case report is to highlight the potential impact psychological factors have in the rehabilitation of musculoskeletal disorders, specifically the rehabilitation of a right hip flexor strain. Case Description: The patient was a 75-year-old male referred to outpatient physical therapy for the assessment of a right hip flexor strain, presenting with psychosocial factors including anxiety and kinesiophobia. Procedural interventions included patient education, neuromuscular re-education, therapeutic exercise, and manual therapy, but lacked psychosocial assessment. **Outcomes:** The patient was seen for 16 visits over eight week's time, including the initial evaluation. His pain rating score improved from 8/10 on initial evaluation to 6/10 on discharge in accordance to the Numeric Pain Rating Scale (NPRS). After four weeks of continued physical therapy intervention after his re-evaluation, he was referred back to his primary care provider for further diagnostic testing as his progress began to plateau. **Discussion:** This case report highlights how psychosocial factors such as kinesiophobia and anxiety can complicate patient care. While physical therapists are often well versed in the treatment of musculoskeletal disorders, numerous external factors make it difficult for physical therapists to properly assess psychosocial factors. Further research should be conducted regarding the importance of psychosocial assessment in the context of musculoskeletal disorder rehabilitation.

Word Count: 233

Background and Purpose:

Globally, musculoskeletal disorders are the third leading cause of disability, affecting an estimated 1.71 billion people. Over 150 conditions are considered musculoskeletal disorders with reduced mobility, function and pain being the most common traits. If untreated, musculoskeletal disorders can result in chronic pain, which is defined as pain lasting greater than six months in duration. Approximately 50 million adults in America are living with chronic pain, costing an estimated \$560 billion in direct medical costs, lost vocational productivity, and funding of disability programs each year. As population numbers and average age continue to increase globally, the prevalence of musculoskeletal disorders and chronic pain is expected to rapidly increase.

While pain is often thought of as being a physical sensory process, there are behavioral, cognitive, affective, and social components of pain that often may go unrecognized. Chronic pain puts an individual at a four-fold increase of meeting the ICD-10 criteria for anxiety or depressive disorders. It is also estimated that of those who experience chronic pain, 50-70% develop kinesiophobia. Kinesiophobia is defined as a severe fear of movement due to the sense of susceptibility to injury or reinjury and is attained via a direct adverse experience or social learning. Kinesiophobia can predict negative changes in the quality of life for individuals living with chronic pain, and increased disability when high levels are noted upon initial evaluation. As kinesiophobia is noted to be both prevalent and detrimental to movement, this raises the question of the physical therapist's role with relation to psychosocial factors that may be influencing treatment and patient outcomes. Currently, many physical therapists may shy away from incorporating psychosocial assessment into care as psychosocial interventions are non-reimbursable by insurance, screening tools are long and complex, and therapists fear of being

under qualified to properly treat psychosocial components.⁷ The purpose of this case report is to highlight how the potential impact of psychosocial factors may have contributed to the rehabilitation of a 75-year-old patient with a right hip flexor strain.

PATIENT HISTORY AND SYSTEMS REVIEW

The patient and clinical instructor provided verbal consent for use of the patient's medical information and comments for the purposes of this case report. The patient was a 75-year-old Caucasian male referred to outpatient physical therapy (PT) by his primary care physician (PCP). His PCP gave him a diagnosis of a soft tissue injury of the right hip. The patient reported that the hip pain began when he was bending forward to put on a sock. At the time, he was living alone in a retirement community, recently divorced, and not taking any medications. His prior medical history was unremarkable. His activities included watching hockey, going for walks, gardening, and socializing with others living in the community.

On initial evaluation (IE), the patient had been experiencing right hip pain that began one to two years ago. The patient defined his pain as a sensation of "grabbing" or "jabs" in the right anterior thigh and lateral hip that comes on unexpectedly. He was self-limited with prolonged weight-bearing activity and sitting, resulting in a reduction of his level of activity due to pain and associated fear. The patient reported improvement of symptoms with the application of topical analgesics such as Bengay. Due to the duration of the patient's pain, he reported that he felt like he was not being heard by the healthcare system. During his IE, the patient reported anxiety, depression, kinesiophobia and claustrophobia. Figure 1 shows a letter written by the patient describing his symptoms and concerns. His goals for physical therapy were to "be heard" and "have his pain go away." Right hip fracture, dislocation, and joint effusion were ruled out by x-ray imaging in August, and mild arthritis of the right hip was revealed. Upon evaluation,

osteoarthritis, femoral acetabular impingement, and labral tear were considered, and ruled out following the appropriate special tests.

Due to his unusual presentation, the patient presented as an appropriate candidate for case report. The purpose of this case report was to emphasize the importance of the understanding and management of psychosocial components. Components include reported anxiety, depression, kinesiophobia and claustrophobia, when managing diagnoses such as chronic musculoskeletal pain with an acute exacerbation.

EXAMINATION- TEST AND MEASURES

Given the patient's history, age, and list of musculoskeletal impairments, a variety of tests and measures were administered upon IE. Goniometry, a reliable and effective method for evaluating active range of motion (AROM), revealed decreased right hip flexion, external rotation, and internal rotation ROM. Manual muscle testing (MMT), the most common reliable method for assessing muscle strength of the extremities, was utilized to test his strength. MMTs are graded on a 5-point scale (0-5) with 0 being "no muscle contraction" and 5 being "full range of motion through maximal resistance". The patient's lower extremity strength was graded as 5/5 bilaterally on IE. Given the patient's age, the Tinetti Performance Oriented Mobility Assessment (Tinetti) was utilized to determine if the patient had a risk of falling. According to *Ryan et al.*, the Tinetti demonstrates excellent inter-rater reliability for elderly adults, and consists of 28 items and is rated on a 3-point ordinal scale that ranges from 0-2. The higher the score, the more independent the patient is. During IE, the patient scored a 28 indicating that he was not at a risk of falling.

Additionally, during IE, the patient presented with antalgic and trendelenburg gait. His symptoms could be reproduced with palpation of the right iliopsoas, psoas, and tensor fascia lata.

The Flexion Abduction External Rotation (FABER) test, used to differentiate whether a patient's symptoms were originating from the hip, sacroiliac joint, or lumbar spine, has been proven to be a reliable test for hip provocation with an inter-rater reliability of good to excellent (ICC 0.76-0.86). On IE, this test aggravated symptoms in patient's right hip.

The Scour test was used to determine if there was a nonspecific hip pathology, ¹³ such as hip labrum, capsulitis, osteochondral defects, acetabular defects, osteoarthritis, avascular necrosis, and/or femoral acetabular impingement syndrome. ¹³ This test has inter-rater reliability of .87, making it a reliable test to perform clinically. ¹³ The patient presented with apprehension in his right hip when the test was performed on IE indicating a nonspecific hip pathology.

The Lower Extremity Functional Scale (LEFS) is a patient-reported outcome measure that was administered on IE, to determine how a patient's lower extremity musculoskeletal condition affects their functional status.¹⁴ The LEFS, consisting of 20 items, is scored on a 0-4 scale, 0 being unable to perform an activity and 4 being no difficulty.¹⁴ A maximum score of 80 indicates no functional limitation.¹⁴ A 2016 systematic review on the LEFS reports ICC values between 0.08 and 0.998 showing excellent interrater reliability.¹⁴ On IE, the patient scored a 43/80 indicating 53% of maximal function.

CLINICAL IMPRESSION: EVALUATION, DIAGNOSIS, PROGNOSIS

Based on examination data, the patient's signs and symptoms confirmed the diagnosis of a right hip flexor strain, confounded by admitted psychological factors that impacted his treatment. Physical therapy intervention was recommended to improve soft tissue restrictions, poor motor control, movement pattern dysfunction, poor stability and proprioception, diminished ROM, impaired strength, and abnormal gait. The patient's medical diagnosis was M25.551: pain in right hip and ICD-10 was S76.011A: strain of muscle, fascia, and tendon in right hip. His

diagnosis was of low-level complexity based on the brief review of his medical history. The patient's expected prognosis was excellent due to his prior level of function, motivation, and compliance. Potential barriers that impacted therapy were the patients' psychosocial factors, such as his reported and observed anxiety, depression, kinesophobia, and claustrophobia.

Planned interventions included education, gait training, ROM, joint mobilizations, LE strengthening, neuromuscular re-education, proprioception, balance, and flexibility exercises. Short- and long-term goals were to decrease pain utilizing the NPRS to 1/10 and return to his prior level of activity without pain. A re-evaluation was conducted every tenth visit to evaluate the patient's progress.

INTERVENTION AND PLAN OF CARE

The patient's plan of care (POC) primarily consisted of myofascial release to hip musculature, joint mobilizations, hip strengthening and motor control exercises, and stretching. The patient required verbal cueing for activation of core and gluteal muscles when performing therapeutic exercises throughout the POC.

COORDINATION, COMMUNICATION, DOCUMENTATION

The patient was educated regarding his diagnosis, prognosis, and related pathology and provided consent to continue with the (POC). Re-evaluations were performed every tenth visit and documented using Therapy Source electronic medical records (EMR). Subjective statements from the patient were documented by the student physical therapist (SPT) during each treatment session. Additionally, the SPT would consult with the supervising physical therapist on any decision being made regarding POC or questions from the patient. Consultation with the physicians was conducted via the "SRS" electronic health record system.

PATIENT/CLIENT-RELATED INSTRUCTION

The patient was given three exercises to complete at IE as part of his home exercise plan, in an effort to control pain levels and increase strength. The exercises were progressed as tolerated by the patient, and he was educated on how to do each exercise with explicit instructions. The patient made note of the exercises during the treatment sessions and reported compliance with his program. He was consistent with visit attendance and arrived with an attentive list of observations and comments about his HEP. All questions were answered at the beginning of each session.

PROCEDURAL INTERVENTIONS

Table 1 contains patients' therapeutic exercises with in-depth descriptions of how to complete the exercise, repetitions, sets, and body position.

OUTCOMES

The patient attended 16 physical therapy visits over eight weeks. He presented with impairments in right hip ROM, functional strength, gait pattern, flexibility, joint mobility, soft tissue tenderness, pain levels, motor control, stability, and proprioception. At his re-evaluation during the 10th visit, the patient reported improvement in pain level and lower extremity function. His typical pain remained unchanged using the NPRS. His right hip pain at its worst improved from a score of 8/10 to 6/10. The plan of care was to continue physical therapy intervention to improve his ROM, abnormal gait, strength, soft tissue restrictions, motor control, and stability. Four weeks after re-evaluation he was referred to his PCP due to limited progressive improvement, and increased patient complaints of right posterior lower extremity

pain that started insidiously at seven weeks. The student physical therapist, physical therapist, and patient agreed that the patient had reached a plateau in his care due to reported pain limitation.

DISCUSSION:

Strengths and Limitations

The purpose of this case report was to illustrate how psychosocial factors could impact patient care. Strengths of this case report include a large amount of subjective data collected from the patient. Limitations are evidence for direct cause and effect, and the examples demonstrated in this case report cannot be generalized to the population. Other limitations would be that the values assessed during the initial evaluation were not re-tested during re-evaluation. While there is ample evidence to support clinicians collecting psychosocial data during patient care, more evidence needs to be collected to understand the role these factors play in the plan of care.

Conclusion

Physical therapy is a profession that views patients in their entirety. The combination of physical and mental health is necessary to consider during patient care. While most physical therapists feel well versed in the physical aspect of care, there are potential reasons why psychosocial aspects of care may often be overlooked. 15 - Psychological Aspects of Rehabilitation Perceived by Physical Therapists," discusses that many physical therapists perceive that they have not been professionally prepared to address the psychosocial concerns of patients. 15 Therapists may perceive that the administration of outcome measures or assessment tools geared to the evaluation of psychosocial aspects of patient care takes time away from the direct evaluation and treatment of patient pain and loss of function. Additionally, therapists may

perceive that the referral to another more specialized health care professional is ethically appropriate, thus relieving the therapist from having to address psychosocial concerns within physical therapy treatment sessions. A final reason for avoiding the responsibility of addressing psychosocial concerns of patients within a treatment session may be that the time required to do so may be reflected as "wasted," as it is non-reimbursable via typical insurance structures.¹⁵

This case report reflects that these psychosocial factors were a large distractor from patient care for both the patient and treating therapist. The therapist did not want the patient to fixate on these factors and wanted them to rather focus on reducing the pain and wanted to highlight the patient's progress in physical therapy. However, there were many admitted confounding psychological components that the patient reported that may have been correlated with the patient's complaint of pain. There were no concrete ways to determine this, and more research needs to be done to highlight the correlation of psychosocial factors while a patient is experiencing personal life changes.

To further assess this patient population in the future, other psychosocial outcome measures that could be included in a patient evaluation could be, the Fear-Avoidance Belief Questionnaire. This outcome measure is tailored towards patients with low back pain. This assessment tool can give the therapists an objective measure of activities that the patient might be avoiding due to fear. Another assessment measure that could be conducted for this patient population is the Tampa Scale of Kinesiophobia. If a patient scores higher on this outcome measure, the test reflects that the patient demonstrates more kinesophobia. These two assessments would serve as objective measurements of the patient's perception of their own Kinesiophobia or avoidance of certain behaviors.

Although there is much education about taking into context psychosocial determinants, it is important that more research is conducted to help clinicians work with patients with psychosocial factors in managing chronic musculoskeletal pain and reduce the rate of a plateau.

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Figure 1:

"I see you on 3/12 previously 9/11 and 10/21). I have two troubling issues that need close assessment. I'm concerned that the allotted half hour will not give us enough time for a thorough, productive discussion. Therefore, in an effort to save precious time, I'm providing you with the necessary update beforehand.

<u>Left Achilles: The</u> issue arose last March/April. I had an x-ray in September. Although I realize Achilles's problems can take a long time to heal, there area remains somewhat stiff and sore (slight improvement). Although mobile, I favor that side while walking, taking short steps resulting in shorter gait.

<u>Right Hip/Groin:</u> I suffered a severe groin pull while high-jumping many years ago. Since then, I infrequently get a quick pull. Over the last several years, I've had several very uncomfortable pulls that work themselves out. Often, I have a feeling of "weakness" but nothing adverse happens. Dr. Deck found no hernia. In August, a hip x-ray revealed "mild arthritis."

The hip area has become problematic. I believe my altered gait (compensating for the Achilles) for so long may have significantly affected ("thrown off") the muscles on my right side. I have ongoing muscle soreness and discomfort around the hip muscles, on and off with the groin (made worse), the upper thigh (not constant), and my old nemesis, the sacroiliacs, have become more sensitive. It's like the whole area has completely "tensed up" infrequently. I get a very unpleasant painful grab usually as a result of a certain sudden downward, slightly twisting movement: jamming my right foot into my shoe, bending down to pull up a sock or dog poop, perhaps a quick movement from right to left (just a quick grab), or even rolling over in bed, again from right to left. I've learned to manage my movements but there is that awful feeling of expectancy that something is going to happen.

I understand that, as we age, muscles/tendons can dry out and shorten. I've wondered if I have a bone spur, bone impingement, tendonitis (in addition to the mild arthritis), or even a labral tear (no clicking).

I believe this is a "soft tissue" issue rather than a mechanical. Why? I can walk (Altered),

use my rowing machine, go downstairs (which surprises me—downward motion), and perform most exercises. I stretch diligently and often. BENGAY offers some relief, Aleve and ibuprofen not so. Finally, I think I feel a bit better after walking or using throwing machine followed by a hot shower.

I'm physically and mentally tired by all of this discomfort and wondering "what happens next". To compound matters, I have a claustrophobia problem which I've managed well over the years (especially most closed in places), less so with having to lie flat without moving. Without question, I would have to have anesthesia (NOT a sedative!) like with a colonoscopy (that is, I'm "out"), if an MRI is required – I believe in Portland? This would be a stressful event.

Im a believer in the "Go Slow" approach. I wondered 1. If the hip and foot x-rays should be reviewed and/or repeated; 2. Would a Cat Scan that uses dye be appropriate (not in a machine); 3. Would an injection steroid/other) in the hip muscles be another option?

I hope the above is helpful and that Dr. Deck and you would discuss this

Thank you for your attention!"

Table 1:

Visit Number	Manual Therapy	Therapeutic Exercise	Neuromuscular Re- education	Modalities
Visit 1 (Initial Evaluation)		 Education on hip muscle balance regarding tissue mobility and strength Prone straight leg raise into extension: 3x10 Piriformis/figure four stretch: 3x30 seconds Prone press up: 3x30 seconds 	• Supine glute bridges: 3x10	
Visit 2	 Myofascial release to right psoas, quadriceps, tensor fascia lata Right hip flexor contract/relax /active release Long axis traction to right hip Oscillatory Grade II/III Right hip circumduction in supine 	SAME AS VISIT 1 Tripod foot: 3x10 Removed education	SAME AS VISIT 1	

Visit 3	 Myofascial release to right psoas, quadriceps, tensor fascia lata Right hip flexor contract/relax/acti ve release Long axis traction to right hip Oscillatory Grade II/III Right hip circumduction in supine sustained 	SAME AS VISIT 2 PROGRESSED - Prone straight leg raise into extension with 1#: 3x10 PROGRESSED - Prone press up: 3x1 min	SAME AS VISIT 2	Vasopneumatic compression moderate MM/Hg (10 min)
Visit 4	SAME AS VISIT 3	SAME AS VISIT 3 Sidelying right hip abduction: 3x10 PROGRESSED - Prone straight leg raise into extension with 2#: 3x10 Standing TFL stretch: 3x30 sec Level surface ambulation (5 min) Forward trunk lean and midfoot strike with verbal cuing	SAME AS VISIT 3	Not performed
Visit 5	SAME AS VISIT 4	 SAME AS VISIT 4 Clamshells: 3x10 PROGRESSED - Prone straight leg raise into extension with 3#: 3x10 Seated manual toe extension on left foot: 3x10 seconds 	SAME AS VISIT 4	Not performed
Visit 6	SAME AS VISIT 5	SAME AS VISIT 5 Removed level surface ambulation PROGRESSED: clamshells with yellow resistance band around knees: 3x10	SAME AS VISIT 5	Not Performed
Visit 7	SAME AS VISIT 6	SAME AS VISIT 6 Removed sidelying right hip abduction Hip hike on 8 inch box: 3x10	PROGRESSED: Single leg bridge with opposite knee to chest: 6x5	Not Performed
Visit 8	SAME AS VISIT 7	SAME AS VISIT 7	 Removed single leg bridge with opposite knee to chest: 6x5 Supine glute bridges: 3x10 	Not Performed
Visit 9	SAME AS VISIT 8	SAME AS VISIT 8	SAME AS VISIT 8	Not Performed

Visit 10 (re- evaluation)	SAME AS VISIT 9	SAME AS VISIT 9 • PROGRESSED: Prone straight leg raise into extension with 5#: 3x10	SAME AS VISIT 9	Not Performed
Visit 11 (canceled appointment due to personal conflict)				
Visit 12	SAME AS VISIT 10	SAME AS VISIT 10 Removed tripod foot Removed seated manual toe extension on left	SAME AS VISIT 10 • Single leg balance with emphasis on hip position: 10x10 seconds	Not Performed
Visit 13	SAME AS VISIT 12	SAME AS VISIT 12	SAME AS VISIT 12	Not Performed
Visit 14	SAME AS VISIT 13	SAME AS VISIT 13	SAME AS VISIT 13 • Lateral step ups to 4 inch step: 3x10	Not Performed
Visit 15	SAME AS VISIT 14	SAME AS VISIT 14	SAME AS VISIT 14	Not Performed
Visit 16	SAME AS VISIT 15 Removed hip circumduction	SAME AS VISIT 15	SAME AS VISIT 15	Not Performed
Visit 17	SAME AS VISIT 16 • Myofascial release to gluteus medius/minimus	Not Performed	Not Performed	Vasopneumatic compression moderate MM/Hg (10 min)