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Low back pain with psoas tightness

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University of North Dakota

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LOW BACK PAIN WITH PSOAS TIGHTNESS

by

TREVOR NORTHAGEN

A Scholarly Project Submitted to the Graduate Faculty of the

Department of Physical Therapy
School of Medicine and Health Sciences

University of North Dakota

in partial fulfillment of the requirements for the degree of

Doctor of Physical Therapy

Grand Forks, North Dakota
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This Scholarly Project, submitted by Trevor Northagen in partial fulfillment of the requirements for the Degree of Doctor of Physical Therapy from the University of North Dakota, has been read by the Advisor and Chairperson of Physical Therapy under whom the work has been done and is hereby approved.

Schaurn Ovca
(Graduate School Advisor)

Chairperson, Physical Therapy

ii
PERMISSION

Title Low Back Pain with Psoas Tightness

Department Physical Therapy

Degree Doctor of Physical Therapy

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Abstract

Background and Purpose

Low back pain is a prevalent healthcare issue which has a number of causes. There are many types of treatment with varying levels of success. The psoas is a back muscle which may undergo changes in a patient with back pain. Treatment may have to be modified if changes are seen in the psoas.

Case Description

A 66 year-old woman reported low back and right hip pain, as well as right-sided abdominal pain around a surgical incision. The physical therapy examination revealed adhered scar tissue around the incision, psoas muscle tightness, as well as low back and hip pain which centralized with back extension.

Outcomes

The patient underwent physical therapy treatment to address pain and limitations. Interventions included patient education, home exercise program, manual therapy (soft tissue mobilization over the psoas), electrical stimulation (interferential current), and a strengthening program which included the use of the Lumbar MedX system. The interventions resulted in the abolition of abdominal, hip and back pain. Patient reported that with increased activity she experienced minor back pain, but that she was able to eliminate it by herself within a few minutes.

Discussion

All low back pain patients are unique and it is important to address all possible causes. Most low back pain patients have some muscle atrophy so a strengthening program is an important rehabilitation intervention. The Lumbar MedX has been shown to be an effective tool to isolate the lumbar extensors which are often atrophied with low back pain patients. It is important to take the patient into account when deciding the frequency, resistance, sets and repetitions of strengthening exercises. Muscular imaging may help determine how prevalent psoas asymmetries are among low back pain patients and improve the treatment of these individuals.
Chapter I

Background and Purpose

Low back pain (LBP) is one of the most prevalent healthcare issues seen in industrialized countries; roughly 70% of the population experiences LBP at some point in their life.\textsuperscript{1} It is one of the most common musculoskeletal impairments seen in physical therapy practice, accounting for 36% to 53% of all client visits.\textsuperscript{2} It has some proposed causes, including obesity\textsuperscript{3} and anatomical origins.\textsuperscript{4} Anatomical origins include: ligaments, facet joints, the vertebral periosteum, the paravertebral musculature and fascia, blood vessels, the annulus fibrosus, and spinal nerve roots.\textsuperscript{5} The prevalence in society, number of recurrences, and the length of treatment make LBP a costly disease to treat.\textsuperscript{1} The cost associated with LBP in Western industrialized societies is due in part to treatment, but a larger portion is due to informal care and production losses.\textsuperscript{6} There are a lack of methods for grouping and subgrouping patients with LBP, which in turn makes the decision making process for identifying the proper treatment difficult.\textsuperscript{7} As much as 85% of patients will not be given a specific diagnosis, but instead be defined as having low back sprain, strain, or degenerative processes. These terms are not well defined in regards to the low back and provide little insight into the cause of LBP.\textsuperscript{5} Treating LBP is a challenge because there are so many factors that play into a low back pain diagnosis.

Many treatment methods for LBP have been proposed including traction, stretching, directional exercises, modalities, rest, general activity, trunk strengthening exercises and isolated lumbar extension. Trunk strengthening exercises are often given to LBP patients; however the results are still being assessed. General trunk strengthening as well as
strengthening of the lumbar multifidus and the transverse abdominis muscles have shown to decrease pain and functional impairments, some negative effects seen with LBP. The internal oblique muscle has also been shown to be increasingly activated in patients without LBP compared to those with LBP so strengthening of the obliques can also be used as an intervention.

Another area of LBP treatment is the use of machines, such as the Lumbar Med-X (see figures 1-3), to isolate and strengthen lumbar extensor muscles using the aid of pelvic stabilization (see figure 4). The pelvis must be stabilized in order to isolate and strengthen these extensor muscles. The strength is measured by extensor torque at varying angles. Without pelvic stabilization there is no isolation of the lumbar extensor musculature which is chronically weak in many LBP patients. Extensor weakness is a risk factor for low back pain likely due to the propensity of being injured with increasing forces. Increased low back strength has shown to decrease back pain and improve function.

The psoas muscle may be another important muscle to consider in the evaluation and treatment of low back pain. The psoas is primarily regarded as a hip flexor, but it has also been reported to have a role in spine stabilization. The muscle courses from the lumbar spine, L1 to L5, to the lesser trochanter of the femur. Studies concerning the correlation of LBP and the psoas have included atrophy, hypertrophy and tightness of the psoas muscle. Are the changes in the anatomy of the psoas muscle the cause of the low back pain or the result of the LBP? Should the psoas be treated in conjunction with the low back pain, or is it sufficient to treat the back pain as you would with other LBP diagnoses? It will be important to note how
lumbar stabilization muscles including the multifidus and other lumbar extensors, internal oblique, transverse abdominus, and psoas react to common LBP interventions.\textsuperscript{14,16}

It may be useful to determine if the psoas muscle may in fact be a cause of LBP given the large number of proposed causes, anatomical issues and treatments. The purpose of this case report is to: (1) identify if the psoas causes low back pain, (2) define how a therapist can determine if the psoas is causing the pain, (3) identify what the signs of LBP are if they are caused by the psoas, (4) see whether the treatment should be modified if the psoas is determined to be the cause of pain, (5) identify if trunk-strengthening exercises are indicated for LBP, and (6) whether the Lumbar MedX is effective in the treatment of LBP.
Chapter II
Case Description

Chief Complaint: Patient is a 66 year old retired woman who is socially active and completely independent at home. She presents to physical therapy with low back, right hip, and right-side abdominal pain and cramping that is more painful with a full bladder.

History: She reported that she has had back pain for many years and right side pain for a couple of years. Her abdominal pain had been increasing over the past few months. The patient’s abdominal pain increased with a full bladder and was causing her to wake several times during the night. She rated her pain 3-4/10 (0=no pain, 10=emergency room pain) at rest and increasing to 5/10 with activity. Her back pain made bending, sitting, standing, walking, riding bike and performing yardwork difficult. She had prior physical therapy (PT) which increased her abdominal pain and did not eliminate her back pain. She had a hysterectomy 27 years ago with incision on her right side and she reported that the area of the scar is tender at times, but rubbing the area decreases her pain. She also stated that she had a history of cervical pain, headaches, and osteoarthritis. Evaluation and history indicated that back/hip/abdominal pain were all the result of musculoskeletal changes. No alternative referrals were required for this patient.

Tests and Measures: Patient reported a negative pelvic MRI. Heart rate (60 bpm), blood pressure (122/88 mmHg), and respiration rate (12 breaths/min) were all within normal limits. The patient’s height (5'5") and weight (170 lbs) placed her in the overweight category.
PATIENT: BMI=28.3. Patient had moderate loss of range in lumbar sidebending bilaterally, moderate loss of range into lumbar flexion and a major loss of range into lumbar extension. She had normal range of motion (ROM) in all hip directions bilaterally. Psoas tightness was determined by patient’s report of pain in abdominal area and lack of other symptoms. Slump test was positive bilaterally with pain behind both knees. Straight-leg test was completed and was positive bilaterally at 80 degrees for both the right and left legs. Oswestry Disability Index (ODI) was completed and she scored 7/50, which was defined as minimal disability. Lower extremity sensation, reflexes and strength were normal bilaterally.

Other factors: The patient was an active individual in her home and community. She had friends and close family members. She has medical insurance and did not express any monetary concerns.

Examination, Evaluation, and Diagnosis

Examination: Included several special tests and a functional measure which are defined here.

The Oswestry Disability Index (ODI) is a condition specific outcome measure used in the management of spinal disorders and it is considered the gold standard. There are four English versions and versions in 9 other languages\textsuperscript{17}. The ODI is a self-administered questionnaire that requires 5 minutes to complete and 1 minute to score. The index rates a level of disability and a score of 0-10/50 indicates minimal disability which is the category this patient was at initial evaluation. Intraclass correlation coefficient (ICC) values are reported from 0.84 to 0.94 support the functional measures reliability. A study predicting the changes in ODI scores had an effect size of 0.8 over the 5 week study which supports the tests validity.\textsuperscript{18}
The Slump Test is either a passive or active test that involves the patient sitting on the edge of an exam table with the legs supported and hands behind their back. The examination is performed sequentially. The patient is asked to “slump” their back into thoracic and lumbar flexion. The examiner then places overpressure across the shoulders. The patient then flexes their neck. The neck is stabilized and the examiner dorsiflexes the foot and then asks the patient to extend their knee. The test is then repeated with the opposite foot and finally feet and legs together. If the patient cannot fully extend their knee the pressure on the neck is relaxed and the patient again extends their knee. If the knee extends further or if the patient’s symptoms are worsened the test is positive for increased tension in the neuromeningeal tract. The examiner is not looking for pain, but for reproduction of the patient’s symptoms. The test has a sensitivity of 0.84 and a specificity of 0.83. Inter-tester reliability for the slump knee bend test using the kappa coefficient was 0.71 (95% confidence interval 0.33 to 1.0).

The Straight Leg Raise (SLR) test is used as a diagnostic tool in people with low back or leg pain. The patient lies in a supine position with head and pelvis flat. The knee is fully-extended at all times as the patient’s foot is lifted off the table until full hip flexion or the patient asks the examiner to stop secondary to pain. The angle of hip flexion is measured and the test is repeated with the opposite leg. A normal individual should be able to flex their hip 70-90 degrees with a feeling of tightness in their posterior leg. A positive test will produce shooting pain radiating down their leg along the distribution of the sciatic nerve. The test has been found to have a sensitivity of 0.52 and a specificity of 0.89. Inter-tester reliability for the SLR test using the kappa coefficient was 0.8 (95% confidence interval from 0.39 to 0.94).
### Table 1: Initial Evaluation Tests and Measures

<table>
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<th>Test/Measure</th>
<th>Score</th>
<th>Left</th>
<th>Right</th>
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<tbody>
<tr>
<td>ODI</td>
<td>7/50</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Slump Test</td>
<td>-</td>
<td>(+)</td>
<td>(+)</td>
</tr>
<tr>
<td>SLR</td>
<td>-</td>
<td>(+) @ 80 Degrees</td>
<td>(+) @ 80 Degrees</td>
</tr>
<tr>
<td>Pain</td>
<td>3-4/10(rest), 5/10(Activity)</td>
<td>-</td>
<td>-</td>
</tr>
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**Evaluation:** The patient’s problem list included: pain, psoas tightness, scar tissue adhesions, reduced lumbar mobility, and poor muscle control lead to difficulty bending, walking, standing and rising from sit to stand. She was unable to ride her bike, perform yardwork, or sleep through the night.

Reduced scar mobility and tenderness may have caused some muscle guarding. Buildup of scar tissue can prevent the soft tissue from properly lengthening and contracting which can in turn lead to loss of ROM as well as pain. The psoas muscle tightness which likely occurred secondary to the muscle guarding, based on the fact that she had sensitivity and back pain that developed after the surgery, may have in turn became more extreme and more tender to the touch. The psoas tightness may have led to or exacerbated the low back pain symptoms which were due to a lumbar derangement, an anatomical disruption or displacement within the lumbar segment.\(^{23}\) Lumbago, or generalized LBP, decreased as the patient completed extension exercises during the evaluation.

**Diagnosis:** The patient was classified under several diagnosis codes including: 724.2-Lumbago which is related to lumbar derangement, 847-Sprains and Strains of other and unspecified parts of back which is related to psoas tightness/tenderness, and 709.2 Scar conditions and other
fibrosis of skin. 4D: Impaired Joint Mobility, Motor Function, Muscle Performance, Range of Motion, and Reflex Integrity Associated with Connective Tissue Dysfunction. 4F: Impaired Joint Mobility, Motor Function, Muscle Performance, Range of Motion, and Reflex Integrity Associated with Spinal Disorders. 4I: Impaired Joint Mobility, Motor Function, Muscle Performance, Range of Motion, and Reflex Integrity Associated With Bony or Soft Tissue Surgery.

Prognosis and Plan of Care

Prognosis: The patient's rehabilitation potential was Good for stated goals with pt adherence to physical therapy plan of care and performance of HEP.

Plan of Care: Over a period of 7 weeks the patient was seen 19 times. The patient was seen 3 session per week initially and decreasing to 2 session per week the final two weeks. Patient’s plan of care included:

1. Educating patient regarding treatment options, appropriate posture, exercise, body mechanics, and behavior modifications to minimize symptoms.

2. Patient was initiated into a home exercise program to promote independent management of the current diagnosis.

3. Manual therapy techniques were indicated to restore normal biomechanical movement: right hip and lumbar extension.

4. Modalities as needed to control / relieve symptoms.

5. Patient was initiated into a comprehensive spinal rehabilitation program. This included specific lumbar stabilization training including use of the lumbar MedX, neuromuscular re-education and directional preference exercise activities.

6. Graston technique to anterior abdominal scar and abdominals as needed to reduce fibrotic restrictions and improve mobility.
Chapter III

Intervention

The plan of care included multiple techniques to address the different problems. In addition to the back, hip, and buttock pain issues, which were classified using the Mechanical Diagnosis and Therapy (MDT) otherwise known as the McKenzie Method, the patient had abdominal pain around and near a hysterectomy scar. There was some residual scar tissue from the surgery. The abdominal pain was affecting the patient's sleep and activity level so it was pertinent that it be addressed in conjunction with the LBP.

Early intervention was focused on education of pathology, proper body mechanics, behavior modifications to reduce symptoms and treatment options. Interferential current (electrical stimulation) was used following treatment for 10 minutes to decrease symptoms in treatment days one through three. Treatment began with addressing the abdominal pain, moving to decreasing back pain and then transitioning into strengthening the back to prevent future episodes of pain.

The normal inflammation associated with surgery led to scar tissue buildup around the hysterectomy incision. This buildup of scar tissue prevented the soft tissue from properly lengthening and contracting which can in turn lead to loss of range of motion as well as pain. A relatively new system of soft tissue mobilization (STM) called the Graston Technique was used with this patient. With very little formal research completed, the technique and its uses are based mainly on limited experiences. The metal tool used in the Graston Technique allows the clinician to better feel restriction in soft tissue and provide a means to break up adhesions.
Graston was used for about 10 minutes per intervention the first 2 days of treatment to break up the scar tissue.

The scar tissue around the incision may have led to altered body mechanics which caused tightness of the psoas muscle. The psoas tightness could have caused the low back pain or the LBP may have caused the tightness. Psoas tightness can be responsible for causing or maintaining LBP by diminishing the lumbar or SI-joint range of motion, and in turn possibly the nutrition of the disc, joint cartilage and ligaments. The psoas is a lumbar stabilizer and imbalances between the left and right sides of the body are associated with lumbar spine injuries. In an Australian study elite footballers with LBP had one hypertrophied psoas muscle. Non-athletic subjects with unilateral LBP have shown the psoas to be smaller ipsilateral to the side of pain. STM was used to stretch the psoas. The technique used involved placing the patient in supine with the affected hip and knee bent. The PT applied pressure to the psoas with fingertips as they simultaneously internally and externally rotated the hip slowly and rhythmically. The technique was completed the first 3 days of treatment. The technique was discontinued when the patient reported a dramatic decrease in abdominal pain and pressure with a full bladder.

The McKenzie Method was used for the patient’s LBP and the patient experienced centralization of her LBP with lumbar extension, therefore her directional preference was extension. Directional preference can be identified by a McKenzie Institute credentialed practitioner with 90% inter-rater reliability. Prone press-ups were used as part of the intervention in the clinic and as part of the patient’s HEP. She was educated on the basics of
the McKenzie Method and used prone pressups to centralize her symptoms. In a study completed, back pain patients had significantly better outcomes when their treatment used their directional preference versus either the opposite direction or Evidence-based care (EBC) in which subjects were taught multi-directional, midrange lumbar exercises, and stretches for the hip and thigh muscles.24 36.8% of the subjects in the matched group reported less severe pain and improved neurological status compared to 10.6% in the opposite group and 19.3% in the EBC group.24 The use of prone pressups was phased out as the patient’s LBP was less noticeable as treatment progressed.

Treatment for chronic LBP has been a topic for discussion for many years. There are many proponents for strengthening back musculature. Soft-tissue weakness in the area surrounding the lumbar spine is believed to be a risk factor for LBP.25 Muscular strength and endurance both play a role in the prevention and treatment of LBP and injury.25 The patient was treated with intensive low back muscular training as well as isolated lumbar extension training.

Trunk-strengthening exercises were included from day 2 until the cessation of treatment. Compared with no exercise, trunk strengthening is more effective at reducing pain and increasing function.8 The patient was trained in the Lumbar MedX, 2-3 times per week. For approximately 6 sessions the patient completed one set to exhaustion in the Lumbar MedX. The final 8-9 sessions she completed 2 sets to exhaustion in the MedX. 76% of subjects who underwent a similar regimen had good or excellent results following treatment and of these
subjects, 94% reported at their one year follow-up that they had maintained most or all of their improvements.\textsuperscript{26}
Chapter IV

Outcomes

Within one week, three treatments, the patient no longer reported pain over her hysterectomy scar. By the fifth treatment she had no abdominal pain with a distended bladder. She reported that her sleeping pattern had normalized and she was no longer awoken by abdominal pain. Flexion ROM tested on day 2, using the Lumbar MedX, was 0-54 degrees and at discharge it had increased to 0-60 degrees. Throughout treatment pain had decreased from 3-4/10 at rest and up to 5/10 with activity to 0/10 at the time of discharge. Pain had centralized leaving her R hip area and centralizing into the low back when the patient experienced it. Her ODI score decreased from 7/50 down to 3/50 showing that she was more functional following treatment.

It was hypothesized that the LBP had begun with the irritation in the psoas muscle caused by the decreased mobility in the area of the hysterectomy scar. Initial treatment was initiated with education of the disease process and eliminating as much scar tissue as possible around the hysterectomy scar using the Graston technique and working to loosen a tight psoas muscle using STM to improve body mechanics. Decreased scar tissue as well as a more flexible psoas improved mobility and decreased the likelihood of altered body mechanics. Posture and body mechanics were addressed on day one of treatment and were gradually emphasized less as time progressed, because she had internalized the education. Early exercises included: active hamstring and figure-4 stretches, prone press-ups, standing hip extensions, straight leg dead lifts, and use of the MedX stretch. At the end of treatment on days 1-3 the patient had
interferential current (electrical stimulation) placed on her back for 10 minutes to decrease some acute pain and promote the completion of her HEP. The HEP was concentrated on proper lifting techniques, promotion of good posture, and the use of exercise to centralize and eliminate LBP. The HEP and patient education were both used as part of treatment and as long term management if there were any relapses in LBP.

As the abdominal pain decreased and the patient was able to move with less apprehension she began doing more spinal rehabilitation. Strengthening was done because it has been shown that trunk strengthening will decrease LBP. Treatment began with a measure of low back strength using the Lumbar MedX. The MedX was used for strengthening, from session four until discharge. Resistance began at approximately 50% of the patient’s measured strength and she was asked to go to exhaustion for one set. The MedX was progressed to two sets to exhaustion at roughly the midpoint of treatment when the patient was tolerating treatment better, including less soreness and more centralized LBP. Back musculature strengthening was also done with a pulley system, free weights, body weight resistance and a number of other strengthening methods. These exercises began with side to side and front to back motions and then gradually moved to a combination of the motions as she tolerated new exercises. The patient was taught to emphasize the importance of keeping her internal oblique muscles tight to protect her back and to improve strengthening. Exercise began in the vertical and horizontal planes and then diagonal movements were incorporated as the patient progressed. As treatment progressed the patient was introduced to more strengthening exercises. As she better understood the disease process, she was able to design her own simple exercises as well as modify exercise she did in therapy so she could use them in her own home.
Progression was based on patient tolerance including a self-reported pain and soreness from prior treatments.

Treatment was completed within the estimated time period. At roughly 60 days post discharge the patient had not sought further lumbar spine treatment. She reported some intermittent pain, focused in the low back, that was easily eliminated with a set of prone press ups. She reported no pain in her right abdominal area or over her hysterectomy scar. The patient reported that her sleep was no longer interrupted by back or abdominal pain.

Increased low back strength should prevent or at least decrease future episodes of LBP.
Chapter V
Discussion

LBP is a prevalent and costly healthcare issue with many proposed treatments. Proper treatment is made more difficult by a number of possible causes and a lack of classification. This paper outlined how a LBP patient who had abdominal scar tissue and muscular tightness was treated. The Graston technique and STM were used in conjunction with a strengthening program to treat this patient who had been experiencing chronic LBP. The results suggest that LBP may be treated with a comprehensive strengthening program in conjunction with STM techniques if concurrent problems call for it. The exact cause of LBP may not need to be determined in all cases. As lumbar extensors are strengthened, there has shown to be a reduction of pain and dysfunction in chronic LBP patients regardless of the cause.  

Prior medical interventions may have initiated a cascade of issues which resulted in LBP. Although the mechanism of injury was never determined, treatment was dictated by prior successful treatments based on directional preference determined using the McKenzie method. Strengthening was done with an emphasis on strengthening lumbar extensors with the aid of pelvic stabilization and the Lumbar MedX. One article showed decrease multifidus, a lumbar extensor, atrophy in 80% of LBP patients. The MedX allowed the pelvis to be stabilized (see Figure 4), which showed increased lumbar extensor torque following training versus either a control group or training group without stabilization. While lumbar extensors were likely atrophied they were probably not the only weakened muscles and stressing the back and abdominals in various ways was important to treatment as well.
Based upon how the patient reacted to treatment it was likely that scar tissue around her hysterectomy scar had altered her soft tissue mobility and caused a shortening of the right psoas muscle. The Graston technique was used with good results, supporting its use in eliminating scar tissue, even though there is little randomized control trial research supporting its use. According to patient reports, the back pain was probably present prior to issues with the psoas, but without treating the psoas tightness, normal movement probably wouldn't have been attained.

Using extension exercises for this particular patient allowed pain to decrease, which meant the patient was more likely to complete her strengthening exercises. Determining the directional preference was important because Long et al\textsuperscript{24} showed that there was no deterioration in symptoms when exercises were done in the same direction versus opposite, 12.8% negative outcomes, and 17.5% negative outcomes for patients who did mid range exercises. Breaking a cycle of pain and altered body mechanics allowed the long-standing issues to be addressed.

While this patient had good outcomes with the current plan of care, a slightly modified intervention may have improved results. In one experiment, with all other variables the same, frequencies of 1, 2 and 3 times per week all had similar results, while 1 session per two weeks had poorer results. One session per week may have been the best; subjects reported fatigue when exercising 3x/week and there was some discomfort (pain, fatigue, tightness, etc.) when training more than 1x/week.\textsuperscript{6} The patient was doing lower resistance and higher repetitions and they may have had similar or even better success if the scheme had changed. Subjects had
experimental success using only one set of exercise versus two. In fact, even though 2-4 sets of exercises are recommended for strengthening, one set improves strength, particularly among the novice. Another possibility is that the patient had a relief of symptoms due to increased movement and the pain decreases were not secondary to strength gains, despite the fact that low back weakness is a risk factor for LBP.

Important to consider with a patient similar to this is if there are any range of motion limitations. Be proactive in challenging these patients in building muscle. In general, using a weight that allows the individual to complete 8-12 repetitions will improve strength, muscular mass and endurance. This patient was typically completing sets of more than 20 repetitions, more designed to increase endurance. Keep in mind that high resistance and lower repetitions actually build muscle.

While this patient had good results, it would be interesting to see if she had any recurrent back pain versus similar patient who did not have recognized psoas pain, as well as the length and number of treatment of a LBP patient with psoas tightness versus a more typical LBP patient. Future research may include imaging of the psoas before and after treatment to determine if there were any anatomical changes in the muscle. It is also important that the medical professional educates the patient on the disease process so that they may justify their treatment and attain better compliance.
REFLECTIVE PRACTICE
I chose my particular patient because I felt that she was somewhat unique; I had never heard of a psoas injury. When my CI asked me what I thought was the root of the pain I was unable to give her a good answer. I knew that back pain can come from a lot of sources and I wanted to become better at treating these patients. The patient seemed motivated so I thought that this was a good subject that I could view from beginning to end. What I took from this patient is that you need to address the patient, first and foremost as a back patient, and then decide if there is something else that can be treated. Because this patient was presenting with more than what I would consider a typical back problem, my CI and I also treated the possible cause and the other issues. I feel good that I chose this patient, because she was unique, complex, but I could still understand the treatment and the rationale.

I feel like we had very good results with this patient. She came to us with considerable pain and some limitation in her activities. By the time she was discharged she was virtually pain-free, able to sleep through the night, and returning to her prior level of activity. What I think was most rewarding was the interest she had taken in her treatment and how she had internalized the lessons we taught her. Even though she was experiencing pain at times; she noted how easily, and quickly she could treat it. It is always fun to work with patients who are motivated. I know this may have been a more challenging treatment with a more difficult or lazy patient.

If I were to have changed this patient’s treatment it probably would have been to the repetitions. While I understand that my CI’s reasoning behind very high repetitions (usually between 30 and 40 per set), I feel like we could have achieved better strength increases with a
higher weight and lower repetitions. While the multifidus, the muscle we were aiming our
treatment at, is more of an endurance muscle, it had also theoretically lost 25% or more of its
power. It would be interesting to compare a group of similar low back pain patients who
complete more of a strength workout with high resistance versus a group with high repetitions.

All the interventions, with the exceptions of the Graston for the hysterectomy scar and
the STM for the psoas, we done for a back patient who had centralization of pain with
extension. Exercises began with trying to gain the range that may have been lacking. Exercises
were added to continue challenging the strength of the core. While the clinic had a certain
number of exercises they did most often; I was able to choose which exercises I felt would be
best for the patient as well as add anything I felt would be beneficial. This patient gave me a
strong idea of how to successfully treat other back pain patients. I feel much more confident
working with back patients no matter how they present.
Appendix A

Figure 1: MedX-Spine in flexion

Pelvis fixed, spine in flexion
Appendix B

Figure 2: MedX-Spine in extension

Pelvis fixed, spine in extension
Appendix C

Figure 3: MedX-Spine in neutral
Appendix D

Figure 4: Pelvic stabilization with use of MedX
Resources