Massage Therapy for A Patient With Herniated Disc and Sciatica: A Case Study

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Abstract

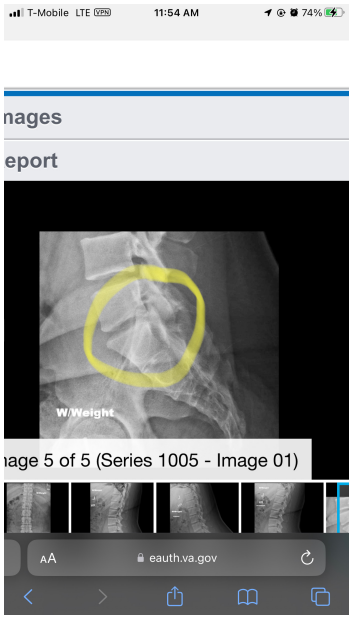
Objective: This case report highlights a 39 year old man who has a herniated disc along with sciatica; an injury sustained during his time in the military. Prior to the beginning of the study, the patient was receiving ongoing physical therapy sessions until his insurance no longer covered it. Once the study began, the patient was receiving massage therapy sessions from the author of this case and another massage therapist local in Arlington, WA as well as routine acupuncture. This case reports aims to demonstrate the benefits of massage therapy for someone with a herniated disc and sciatica. This study took place from April 21st, 2024 to June 25th, 2024 with six sessions spread throughout the time period. **Methods:** The massage sessions were conducted inside the therapist's home. The patient did not pay for any of the services provided during the case study. Massage techniques varied with utilization of Swedish relaxation and deep tissue techniques along with other specific massage techniques such as myofascial release, muscle energy technique, muscle approximation, etc. Hot stones were utilized in 5/6 massage sessions. The goal of the 1st 5 sessions was pain relief and the final session was a mix of pain relief and relaxation as determined by the patient. Range of motion testing was utilized along with a Low Back Pain and Disability Index to monitor changes over time. **Results:** Based on the data prior to beginning the series of 6 massages, the patient indicated limited range of motion and pain in both the hip joint and lumbar areas. He also indicated that the herniated disc and sciatica was affecting his activities of daily living such as lifting, walking, sitting, standing, sleeping, social life, and traveling. As massage interventions were implemented, the patient's condition continued to improve with improved range of motion, reduced pain, and increase satisfaction in his ability to complete his activities of daily living. **Conclusion:** Additional studies and research are needed to identify the role of massage therapy in cases with patients with herniated discs and sciatica. There were limitations to this study that may also require consideration. The results of this study, however, seem promising and seem to indicate that massage therapy could play a significant role in those with a herniated disc and sciatica.

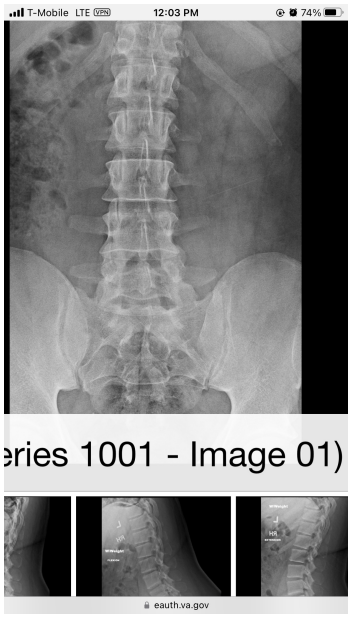
Patient Background and History:

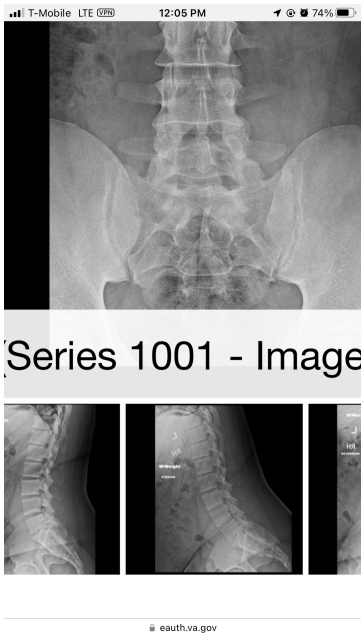
The Injury

In 2004/2005 while serving in the military, the patient of the case study was in a vehicle blast. The original concern was with feet damage at the time, but ultimately physicians discovered spinal damage as well i.e. a herniated disc. The herniated disc included additional complications, primarily lumbar radiculopathy, an inflammation of the root nerve in the lower

back causing pain and/or irritation in the lower back extending towards the legs. In laymen's terms, this is known as sciatica. Physicians have indicated to the case patient that ultimately surgery will be required, but in the interim the goal is to continue conducting activities of daily living with less pain. The images below, courtesy of the patient, display X-rays with the herniated disc:







Relief of pain is key to the case patient considering that he is also a massage therapist and it is the primary way he earns his living.

Additional Treatments

From December 2023 – February 2024, the case patient was going to physical therapy twice a week. Then from February 2024 – March 2024 the case patient was going to physical therapy once a week based on approval of his insurance. The patient's physical therapy sessions ended prior to the beginning of this study. However, the physical therapists provided the patient a routine of exercises and stretches to do at home which the patient continued to do throughout the length of the study. This routine focused on the low back and hips and included:

- Foam rolling the low back.
- Utilization of ice and heat alternatively.
- A variety of exercises and stretches: back bridge, cat cows, windshield wiper, wall sits, hip thrusts, abduction, extension, and flexor stretches.

Starting in January of 2024, the case patient was also seeing a massage therapist locally once every two weeks to manage his low back pain. Throughout the course of this study, the case patient was continuing to see the other massage therapist as well at the same rate of once every two weeks. The below table highlights the dates the patient saw the massage therapist during the course of the study. These sessions were deep tissue focused:

Session Type	Date
Deep Tissue	**04/24/2024**
Deep Tissue	**05/01/2024**
Deep Tissue	**05/15/2024**
Deep Tissue	**05/31/2024**
Deep Tissue	**06/12/2024**
Deep Tissue	**06/19/2024**

Starting in February of 2024, the patient was approved by insurance to receive acupuncture appointments and thus, throughout the course of the study was also seeing an acupuncturist.

The below table highlights the dates the patient saw the acupuncturist with those highlighted during the course of the study:

Session #	Date	During Study?
1	**04/02/2024**	**No**
2	**04/16/2024**	**No**

3	**05/14/2024**	**Yes**
4	**05/21/2024**	**Yes**
5	**05/28/2024**	**Yes**
6	**06/04/2024**	**Yes**
7	**06/18/2024**	**Yes**
8	**06/25/2024**	**Yes**

Case Report

The patient of the case study is a 39 year old man who has a herniated disc along with sciatica; an injury sustained during his time in the military from a vehicle blast. The patient has been receiving care for this issue through various methods such as physical therapy, acupuncture, and massage therapy.

Assessments

Prior to the beginning of the first massage session, the patient was given two assessments. The first assessment is a Low Back Pain and Disability Index Scale (revised Oswestry) assessment. This assessment asks a series of questions about how the patient's back pain affects their ability to manage everyday life. The assessment will be completed at the 1st, 3rd, and the 6th and final session. The full index/assessment is provided in a charting attachment.

The second assessment is active range of motion testing which was completed at the beginning and end of every massage session. In this range of motion, the client completes the motion on their own with therapist's observation. All range of motions were performed while the patient was standing. The range of motions for all sessions was focused on the hip and low back with a series of 9 different motions. The range of motions utilized the following scales:

Item	Categories of Rating	Description	Patient or Therapist?
Action	N/A	Indicates motion done for either hip or low back.	N/A
Quantify	Normal (N) Good (G) Fair (F) Poor (P)	Indicates the ability of the range of motion to be completed depending on degrees moved and restrictions.	Therapist bases it subjectively based on observation of movement.
Rate Pain	Scale of 1 to 10	Indicates the level of pain the patient is in	The patient indicates to the therapist the level of pain.

		when completing the range of motion.	
Quality	Smooth (Sm) Segmented (Seg) Spastic (Sp) Rigid (Rig)	Indicates the quality of movement when completing the range of motion.	Therapist bases it subjectively based on observation of movement.

Sessions

For the purpose of this case study, 6, 1 – hour massage sessions were conducted with the patient to address pain and tension with a herniated disc and sciatica. The 1 hour massages did not include time taken to complete forms, assessments, or post-stretching that was incorporated.

Session 1 (04/21/2024)

The first session with the patient was to assess their level of comfortability with massage and various positionings as well as provide the opportunity to palpate and identify areas of tension, tightness, or stress. The patient wanted the focus of the massage to be on pain relief rather than relaxation. The patient had indicated aggravated tension in low back, hips, and glutes as he had just started his work as a massage therapist and may have not been utilizing the appropriate body mechanics. Prior to the 1st session responses were collected for the Low Back Pain and Disability Index Scale:

Section	Response
Pain Intensity	The pain comes and goes and is moderate.
Personal Care	I can look after myself normally without causing pain.
Lifting	Pain prevents me from lifting heavy weights off the floor, but I can manage if they are conveniently positioned i.e. on a table.
Walking	I cannot walk more than 1 mile without increasing pain.
Sitting	Pain prevents me from sitting more than ½ hour.
Standing	I cannot stand for longer than ½ hour without increasing pain.
Sleeping	My sleep is moderately disturbed (2-3 hours).

Social Life	Pain has no significant effect on my social life apart from limiting my more energetic interests i.e. dancing, etc.
Traveling	I get some pain while traveling but none of my usual forms of travel make it any worse.
Changing Degree of Pain	My pain fluctuates but overall is definitely getting better.

The patients Range of Motion testing results are displayed below prior to the beginning of the massage:

Joint	Action	Quantify		Rate Pain		Quality	
		Right	**Left**	**Right**	**Left**	**Right**	**Left**
Hip	Flexion	F	N	0	0	Sm	Sm
Hip	Extension	P	N	3/10	0	Rig	Sm
Hip	Abduction	P	F	3/10	0	Rig	Sm
Hip	Adduction	F	N	0	0	Rig	Sm
Hip	Lateral Rotation	F	G	0	0	Rig	Sm
Hip	Medial Rotation	P	G	4/10	0	Rig	Sm
Lumbar Spine	Flexion	P	P	5/10	5/10	Rig	Rig
Lumbar Spine	Extension	F	F	3/10	3/10	Rig	Rig
Lumbar Spine	Lateral Flexion	P	P	0	4/10	Rig	Rig

The first massage session utilized Swedish relaxation techniques, deep tissue techniques, and additional muscle targeted techniques highlighted in the table below:

Technique	Location
Swedish Relaxation (Effleurage, Petrissage, Friction)	Whole Body
Swedish Deep Tissue	ESGs, Glute Max, Piriformis, Hamstrings, and Quadriceps
Muscle Energy Technique	Hip Adductors
Contract-Relax	Hip Abductors
Pin and Stretch	Glute Max, Piriformis
Hot Stone (including muscle scraping)	Low Back, Glutes

The patient's Range of Motion testing was completed again at the end of the session with the following results:

Joint	Action	Quantify		Rate Pain		Quality	
		Right	Left	Right	Left	Right	Left
Hip	Flexion	G	N	0	0	Sm	Sm
Hip	Extension	G	N	0	0	Sm	Sm
Hip	Abduction	G	G	1/10	0	Rig	Sm
Hip	Adduction	N	N	0	0	Sm	Sm
Hip	Lateral Rotation	G	N	1/10	0	Sm	Sm
Hip	Medial Rotation	G	N	1/10	0	Sm	Sm
Lumbar Spine	Flexion	G	G	1/10	1/10	Sm	Sm
Lumbar Spine	Extension	F	F	0	0	Rig	Rig
Lumbar Spine	Lateral Flexion	F	G	0	0	Sm	Sm

Session 2 (05/07/2024)

Based on the improvement in the range of motion and pain levels by the patient after the first session, the second session replicated the first session but with some added techniques. The patient indicated the goal of the massage to be focused on pain relief rather than relaxation. He informed the therapist that he was experiencing pain in his quadratus lumborum and now was also experiencing pain in the mid-trapezius and scapula region based on his work as a massage therapist. Although it was unclear whether the herniated discs and sciatica were causing the mid-trap and scapula pain, the therapist utilized techniques to address it that pain as well.

The patients Range of Motion testing results are displayed below prior to the beginning of the massage:

Joint	Action	Quantify		Rate Pain		Quality	
		Right	Left	Right	Left	Right	Left
Hip	Flexion	G	G	0	0	Sm	Sm
Hip	Extension	F	F	3/10	0	Rig	Sm
Hip	Abduction	F	F	3/10	0	Rig	Rig
Hip	Adduction	G	G	0	0	Sm	Sm
Hip	Lateral Rotation	G	G	0	0	Sm	Sm

Hip	Medial Rotation	F	F	3/10	0	Sm	Sm
Lumbar Spine	Flexion	P	P	5/10	5/10	Rig	Rig
Lumbar Spine	Extension	P	P	4/10	4/10	Rig	Rig
Lumbar Spine	Lateral Flexion	P	P	4/10	3/10	Rig	Rig

The second massage session utilized Swedish relaxation techniques, deep tissue techniques, and additional muscle targeted techniques highlighted in the table below:

Technique	Location
Swedish Relaxation (Effleurage, Petrissage, Friction)	Whole Body
Swedish Deep Tissue	Trapezius, Quadratus Lumborum, ESGs, Glute Max, Piriformis, Hamstrings, and Quadriceps
Muscle Energy Technique	Hip Adductors, Hip Abductors, Quadriceps, Hamstrings
Contract-Relax	Upper Trapezius
Pin and Stretch	Psoas Major, Upper Trapezius, Gluteus Maximus
Muscle Approximation	ESGs
Hot Stone (including muscle scraping)	Whole Back, Glutes

It is important to note that compared to the first session, there was an added technique of doing psoas major release work.

The patient's Range of Motion testing was completed again at the end of the session with the following results:

Joint	Action	Quantify		Rate Pain		Quality	
		Right	**Left**	**Right**	**Left**	**Right**	**Left**
Hip	Flexion	N	N	0	0	Sm	Sm
Hip	Extension	N	N	1/10	0	Rig	Rig
Hip	Abduction	N	N	0	0	Sm	Sm
Hip	Adduction	N	N	0	0	Sm	Sm
Hip	Lateral Rotation	G	G	2/10	0	Sm	Sm
Hip	Medial Rotation	G	G	2/10	0	Sm	Sm

Lumbar Spine	Flexion	F	F	2/10	2/10	Rig	Rig
Lumbar Spine	Extension	G	G	0	0	Sm	Sm
Lumbar Spine	Lateral Flexion	F	F	2/10	2/10	Rig	Rig

Session 3 (05/13/2024)

The patient indicated improved range of motion and decreased pain from the massages as well as other simultaneous treatments. The patient indicated the purpose of the massage to be pain relief rather than relaxation. He was indicating pain in the low back area, specifically on the right side. Unlike previous massages, however, the patient also indicated chest pain, most likely due to poor posture and body mechanics from massaging in which shoulders were forwardly slouched or hunched. As this was the 3rd session or roughly halfway point for the purposes of this case study, responses were collected for the Low Back Pain and Disability Index Scale:

Section	Response
Pain Intensity	The pain is mild and does not vary much.
Personal Care	I can look after myself normally without causing pain.
Lifting	Pain prevents me from lifting heavy weights, but I can manage light to medium weights if they are conveniently positioned.
Walking	I have some pain on walking but it does not increase with distance.
Sitting	Pain prevents me from sitting more than 1 hour.
Standing	I cannot stand for longer than 1 hour without increasing pain.
Sleeping	My sleep is slightly disturbed (less than 1 hour sleepless).
Social Life	Pain has no significant effect on my social life apart from limiting my more energetic interests i.e. dancing, etc.
Traveling	I get some pain while traveling but none of my usual forms of travel make it any worse.
Changing Degree of Pain	My pain fluctuates but overall is definitely getting better.

The patients Range of Motion testing results are displayed below prior to the beginning of the massage:

Joint	Action	Quantify		Rate Pain		Quality	
		Right	Left	Right	Left	Right	Left
Hip	Flexion	F	N	2/10	0	Sm	Sm
Hip	Extension	F	N	3/10	0	Rig	Sm
Hip	Abduction	F	N	3/10	0	Seg	Sm
Hip	Adduction	N	N	0	0	Sm	Sm
Hip	Lateral Rotation	F	N	2/10	0	Sm	Sm
Hip	Medial Rotation	F	N	2/10	0	Sm	Sm
Lumbar Spine	Flexion	F	F	2/10	0	Rig	Rig
Lumbar Spine	Extension	P	P	4/10	4/10	Rig	Rig
Lumbar Spine	Lateral Flexion	F	F	0	2/10	Rig	Rig

The third massage session utilized Swedish relaxation techniques, deep tissue techniques, and additional muscle targeted techniques highlighted in the table below:

Technique	Location
Swedish Relaxation (Effleurage, Petrissage, Friction)	Whole Body
Swedish Deep Tissue	ESGs, Glute Max, Piriformis, Hamstrings, and Quadriceps
Muscle Energy Technique	Hip Adductors
Contract-Relax	Hip Abductors
Pin and Stretch	Glute Max, Piriformis
Hot Stone (including muscle scraping)	Low Back, Glutes

In adding on techniques from the previous session including psoas release work, this session also included stretches at the end focusing on muscles of the hip, low back, and piriformis where the pain was occurring. These stretches received a positive response from the patient.

The patient's Range of Motion testing was completed again at the end of the session with the following results:

Joint	Action	Quantify		Rate Pain		Quality	
		Right	Left	Right	Left	Right	Left
Hip	Flexion	G	N	1/10	0	Sm	Sm
Hip	Extension	G	N	0	0	Sm	Sm
Hip	Abduction	G	N	1/10	0	Sm	Sm
Hip	Adduction	N	N	0	0	Sm	Sm
Hip	Lateral Rotation	N	N	0	0	Sm	Sm
Hip	Medial Rotation	N	N	0	0	Rig	Sm
Lumbar Spine	Flexion	G	G	1/10	0	Sm	Sm
Lumbar Spine	Extension	G	G	1/10	0	Sm	Sm
Lumbar Spine	Lateral Flexion	N	F	0	2/10	Sm	Rig

Session 4 (06/12/2024)

Based on the positive response in terms of range of motion including reduced pain levels and in techniques utilized and added to the massage, the 4th session was designed to be a replicate of previous sessions. However, the patient had just returned from a long cross-country trip where he had been sitting for extended periods of time on a plane. This long period of sitting cause a good deal of pain on the trapezius and low back (right side). The patient also seemed more exhausted than usual. He requested not to have anything worked on for the legs which was different compared to previous massages, so the therapist spent the entirety of the time focused on upper body and glutes. The patient had also requested no hot rocks to be utilized during this session.

The patients Range of Motion testing results are displayed below prior to the beginning of the massage:

Joint	Action	Quantify		Rate Pain		Quality	
		Right	Left	Right	Left	Right	Left
Hip	Flexion	N	N	0	0	Sm	Sm
Hip	Extension	N	N	0	0	Sm	Sm
Hip	Abduction	N	N	0	0	Sm	Sm
Hip	Adduction	N	N	0	0	Sm	Sm

Hip	Lateral Rotation	N	N	0	0	Sm	Sm
Hip	Medial Rotation	N	N	0	0	Sm	Sm
Lumbar Spine	Flexion	F	F	5/10	0	Rig	Rig
Lumbar Spine	Extension	F	F	4/10	4/10	Rig	Rig
Lumbar Spine	Lateral Flexion	F	F	0	0	Rig	Rig

The fourth massage session utilized Swedish relaxation techniques, deep tissue techniques, and additional muscle targeted techniques highlighted in the table below:

Technique	Location
Swedish Relaxation (Effleurage, Petrissage, Friction)	Upper Body, Glutes
Swedish Deep Tissue	Supraspinatus, Infraspinatus, Teres Minor, Subscapularis, ESGs, and IT Band
Pin and Stretch	Glute Max, Piriformis, Subscapularis, Psoas Major
Myofascial Release	ESGs, QL

This massage was limited in terms of areas worked based on the patient's preference to work on upper body. Due to this, much of the focus was on the upper body especially shoulder and back muscles. That said, similar techniques were utilized compared to previous sessions including psoas release work and stretches post-massage for the hips, low back, and piriformis. In addition, because the patient was feeling a great deal of tension in the shoulders, subscapularis release work was also completed. Finally, myofascial release was added as a technique to this session.

The patient's Range of Motion testing was completed again at the end of the session with the following results:

Joint	Action	Quantify		Rate Pain		Quality	
		Right	**Left**	**Right**	**Left**	**Right**	**Left**
Hip	Flexion	N	N	0	0	Sm	Sm
Hip	Extension	N	N	0	0	Sm	Sm
Hip	Abduction	N	N	0	0	Sm	Sm
Hip	Adduction	N	N	0	0	Sm	Sm
Hip	Lateral Rotation	N	N	0	0	Sm	Sm

Hip	Medial Rotation	N	N	0	0	Sm	Sm
Lumbar Spine	Flexion	G	G	2/10	0	Rig	Rig
Lumbar Spine	Extension	G	G	0	0	Rig	Rig
Lumbar Spine	Lateral Flexion	G	G	0	0	Sm	Sm

Session 5 (06/18/2024)

Based on the positive response in terms of range of motion including reduced pain levels and in techniques utilized and added to the massage, the 5th session was designed to be a replicate of previous sessions. On this particular day, the patient had come to the massage session directly after seeing the acupuncturist which is reflective in the lower pain levels felt than usual in the range of motion testing completed at the beginning of the session. In particular, the patient indicated that the acupuncturist helped him a lot with feeling a release in the hip area. Thus, the patient indicated experiencing pain and tension in the quadratus lumborum on both sides and mid-back rather than hips. The mid-back pain was still persistent from his profession as a massage therapist and use of poor posture along with poor body mechanics. The patient was fine with utilization of hot rocks again.

The patient's Range of Motion testing results are displayed below prior to the beginning of the massage:

Joint	Action	Quantify		Rate Pain		Quality	
		Right	**Left**	**Right**	**Left**	**Right**	**Left**
Hip	Flexion	N	N	0	0	Sm	Sm
Hip	Extension	N	N	0	0	Sm	Sm
Hip	Abduction	N	N	0	0	Sm	Sm
Hip	Adduction	N	N	0	0	Sm	Sm
Hip	Lateral Rotation	N	N	0	0	Sm	Sm
Hip	Medial Rotation	N	N	0	0	Sm	Sm
Lumbar Spine	Flexion	G	G	3/10	3/10	Sm	Sm
Lumbar Spine	Extension	P	P	4/10	4/10	Rig	Rig
Lumbar Spine	Lateral Flexion	G	F	0	4/10	Rig	Rig

The fifth massage session utilized Swedish relaxation techniques, deep tissue techniques, and additional muscle targeted techniques highlighted in the table below:

Technique	Location
Swedish Relaxation (Effleurage, Petrissage, Friction)	Whole Body
Swedish Deep Tissue	ESGs, Quadratus Lumborum, Trapezius, Glute Max and Med, Gastrocnemius, and Tensor Fasciae Latae.
Muscle Approximation	Gluteus Max
Myofascial Release	ESGs
Contract-Relax	Hamstrings, Piriformis, Quadratus Lumborum
Hot Stone (including muscle scraping)	Low Back, Glutes, Piriformis

The fifth session was similar to previous sessions but with some alternative focus areas. Contract-Relax was extended to the piriformis and quadratus lumborum during the massage. Muscle approximation was also utilized on portions of the gluteus maximus that felt tight. In addition, there was a lot of noted tension and work done in the trapezius, sub-occipital, and gastrocnemius areas.

The patient's Range of Motion testing was completed again at the end of the session with the following results:

Joint	Action	Quantify		Rate Pain		Quality	
		Right	**Left**	**Right**	**Left**	**Right**	**Left**
Hip	Flexion	N	N	0	0	Sm	Sm
Hip	Extension	N	N	0	0	Sm	Sm
Hip	Abduction	N	N	0	0	Sm	Sm
Hip	Adduction	N	N	0	0	Sm	Sm
Hip	Lateral Rotation	N	N	0	0	Sm	Sm
Hip	Medial Rotation	N	N	0	0	Sm	Sm
Lumbar Spine	Flexion	G	G	0	0	Sm	Sm
Lumbar Spine	Extension	G	G	0	0	Sm	Sm
Lumbar Spine	Lateral Flexion	G	G	0	0	Sm	Sm

Session 6 (06/25/2024)

The sixth and final session was reduced in scope and focus. This is because the patient's pain and tension compared to the beginning of the study had decreased significantly in many areas and range of motion was increasing. Thus, it was unsurprising that the patient only indicated pain in the quadratus lumborum areas on just the right side and was not experiencing pain or tension anywhere else. It is also important to note that this session was also conducted after the patient had seen the acupuncturist which may have contributed to reduced levels of pain. Because the patient was feeling and moving much better, he indicated he wanted the focus of the massage to be shifted to being one of pain relief and relaxation combined.

As this was the final session, responses were collected for the Low Back Pain and Disability Index Scale:

Section	Response
Pain Intensity	The pain comes and goes and is mild.
Personal Care	I can look after myself normally without causing pain.
Lifting	I can lift very heavy weights.
Walking	I have some pain on walking but it does not increase with distance.
Sitting	Pain prevents me from sitting more than 1 hour.
Standing	I cannot stand for longer than ½ hour without increasing pain.
Sleeping	My sleep is slightly disturbed (less than 1 hour sleepless).
Social Life	Pain has no significant effect on my social life apart from limiting my more energetic interests i.e. dancing, etc.
Traveling	I get some pain while traveling but none of my usual forms of travel make it any worse.
Changing Degree of Pain	My pain fluctuates but overall is definitely getting better.

The patients Range of Motion testing results are displayed below prior to the beginning of the massage:

Joint	Action	Quantify		Rate Pain		Quality	
		Right	**Left**	**Right**	**Left**	**Right**	**Left**
Hip	Flexion	N	N	0	0	Sm	Sm

Hip	Extension	N	N	0	0	Sm	Sm
Hip	Abduction	N	N	1/10	0	Sm	Sm
Hip	Adduction	N	N	0	0	Sm	Sm
Hip	Lateral Rotation	N	N	0	0	Sm	Sm
Hip	Medial Rotation	N	N	0	0	Sm	Sm
Lumbar Spine	Flexion	G	G	3/10	0	Rig	Rig
Lumbar Spine	Extension	G	G	0	0	Rig	Rig
Lumbar Spine	Lateral Flexion	G	G	0	0	Rig	Rig

The sixth massage session utilized Swedish relaxation techniques, deep tissue techniques, and additional muscle targeted techniques highlighted in the table below:

Technique	Location
Swedish Relaxation (Effleurage, Petrissage, Friction)	Whole Body
Swedish Deep Tissue	ESGs, Glute Max, Glute Min, Piriformis, Gastrocnemius, IT Band, Quadratus Lumborum, Trapezius, Infraspinatus, Teres Minor
Myofascial Release	ESGs, Quadratus Lumborum
Contract-Relax	Quadratus Lumborum, Piriformis, Hamstrings
Pin and Stretch	Glute Max, Glute Min, Psoas Major
Hot Stone (including muscle scraping)	Low Back, Glutes

The sixth session was similar to previous sessions but included more relaxation techniques as requested by the patient. The final session was intentional in its focus area on the low back, glutes, and hips areas with some work done on the shoulders.

The patient's Range of Motion testing was completed again at the end of the session with the following results:

Joint	Action	Quantify		Rate Pain		Quality	
		Right	**Left**	**Right**	**Left**	**Right**	**Left**
Hip	Flexion	N	N	0	0	Sm	Sm
Hip	Extension	N	N	0	0	Sm	Sm
Hip	Abduction	N	N	0	0	Sm	Sm
Hip	Adduction	N	N	0	0	Sm	Sm

Hip	Lateral Rotation	N	N	0	0	Sm	Sm
Hip	Medial Rotation	N	N	0	0	Sm	Sm
Lumbar Spine	Flexion	G	G	0	0	Sm	Sm
Lumbar Spine	Extension	G	G	0	0	Sm	Sm
Lumbar Spine	Lateral Flexion	G	G	0	0	Sm	Sm

Patient Goals

It is important to note that there were noted goals throughout the study that were important to the patient for both short-term and long-term. The focus of the goals was based on the bridge exercise provided to the patient to do at home when he was seeing a physical therapist. The exercise is completed by the patient lying on his back. While keeping the shoulders and head relaxed on the floor, the hips are raised to form a straight line from the knees to the shoulders. The patient wanted to maintain pain levels while increasing the number of bridge exercise sets done. It is important to the note that in the first 3 sessions the goal was focused on maintaining low back pain and in the latter 3 sessions the goal was shifted to maintaining mid-back pain.

Short-Term Goals:

- Keep low back pain at a 6/10 while completing 3 sets of 5 of the bridge exercise in 3 sessions.
- Keep mid-back pain at a 4/10 while completing 3 sets of 5 of the bridge exercise in 3 sessions.

Long-Term Goals:

- Keep low back pain at a 6/10 while completing 3 sets of 10 of the bridge exercise in 6 sessions.
- Keep mid-back pain at a 4/10 while completing 3 sets of 10 of the bridge exercise in 6 sessions.

Discussion

A herniated disc occurs when the internal portion of the disc called the nucleus pulposus protrudes through the outer layer called the annulus fibrous. Trauma, such as from a vehicle explosion, is the second most common cause of disc herniation. According to statistics provided by the *National Institutes of Health*, the incident rate of a herniated disc is about 5 to 20 cases per 1000 adults (0.5 % - 2%) annually. The condition is most common in those between their 30s – 50s with males having the condition at twice the rate as women. The prevalence of symptomatic disc of the lumbar spine is in 1% - 3 % of patients. For those 25-55 years old, 95% of herniated discs occur at L4-L5 or L5-S1. For someone to have back pain caused by disc herniation is quite rare. [3]

On the other hand, sciatica is caused by any structural impacts or compressing of the sciatic nerve. Unsurprisingly, the most common cause of sciatica is a herniated disc. Sciatica is a bit more prevalent although almost always misunderstood. Sciatica has no gender predominance. Statistics also indicate that the probability of someone having sciatica in their lifetime is somewhere between 10% - 40% with an annual rate of about 1% - 5%. Surprisingly, there is not much data nor research on people with both herniated discs and sciatica and how massage therapy can improve living with the conditions combined. However, there is research on the effects of massage therapy for each of the conditions. [2]

A case study conducted in 2008, found that massage therapy helped to increase range of motion, decrease pain, and assist in healing a client with low back pain and sciatica symptoms. The study even showed that the client was able to increase their activities of daily living as the study progressed. The therapist utilized effleurage, petrissage, kneading, trigger point therapy, myofascial techniques, friction, and muscle stripping. Treatment was applied to specific muscles including: ESGs, quadratus lumborum, psoas major, iliacus, gluteals, piriformis, hamstrings, and gastrocnemius. Passive stretching was also incorporated into all sessions. Other studies cited referenced in this study indicated that massage therapy can reduce intensity of pain, increase patient function, decrease depression and anxiety, improve sleep patterns, and improve range of motion. [1]

An experimental study conducted in 2011 found that a combined therapeutic routine of massage and exercise therapy improve the quality of life in male patients who have chronic low back pain due to a lumbar disc herniation. The study not only found improved physical mobility and function in accomplishing daily tasks and overall pain reduction, but also improved mental health. Massage therapy has been shown to increase dopamine levels, improved muscle function via blood circulation, improved recovery rate after exercise, reduced muscle fatigue, and increased ability to handle pain by clients. [4]

There is extremely limited massage therapy research focused on those with both herniated disc and sciatica conditions. This study aims to add to that body of knowledge. In this study there were two methods of measuring improvement over time. The first was the Low Back Pain and Disability Index that was measured at the 1st, 3rd, and 6th sessions. The chart below shows the

change in answers over time and highlights sections where there was improvement in green, stagnancy in yellow, and worsening in red.

Section	Responses		
	1st Session	**3rd Session**	**6th Session**
Pain Intensity	The pain comes and goes and is moderate.	The pain is mild and does not vary much.	The pain comes and goes and is mild.
Personal Care	I can look after myself normally without causing pain.	I can look after myself normally without causing pain.	I can look after myself normally without causing pain.
Lifting	Pain prevents me from lifting heavy weights off the floor, but I can manage if they are conveniently positioned i.e. on a table.	Pain prevents me from lifting heavy weights, but I can manage light to medium weights if they are conveniently positioned.	I can lift very heavy weights.
Walking	I cannot walk more than 1 mile without increasing pain.	I have some pain on walking but it does not increase with distance.	I have some pain on walking but it does not increase with distance.
Sitting	Pain prevents me from sitting more than ½ hour.	Pain prevents me from sitting more than 1 hour.	Pain prevents me from sitting more than 1 hour.
Standing	I cannot stand for longer than ½ hour without increasing pain.	I cannot stand for longer than 1 hour without increasing pain.	I cannot stand for longer than ½ hour without increasing pain.
Sleeping	My sleep is moderately disturbed (2-3 hours).	My sleep is slightly disturbed (less than 1 hour sleepless).	My sleep is slightly disturbed (less than 1 hour sleepless).
Social Life	Pain has no significant effect on my social life apart from limiting my more energetic interests i.e. dancing, etc.	Pain has no significant effect on my social life apart from limiting my more energetic interests i.e. dancing, etc.	Pain has no significant effect on my social life apart from limiting my more energetic interests i.e. dancing, etc.
Traveling	I get some pain while traveling but none of my usual forms of travel make it any worse.	I get some pain while traveling but none of my usual forms of travel make it any worse.	I get some pain while traveling but none of my usual forms of travel make it any worse.
Changing Degree of Pain	My pain fluctuates but overall is definitely getting better.	My pain fluctuates but overall is definitely getting better.	My pain fluctuates but overall is definitely getting better.

As the chart above reflects, the patient experienced:

- Reduced pain intensity over time.
- Improvement in his ability to lift weights or heavy items.
- Reduced pain while walking distances.
- Reduce pain while sitting for extended periods of time.
- Improved sleep patterns including less disturbed sleep at night.

The chart also demonstrates that there was some stagnancy for the patient in terms of his ability to take care of himself, his ability to stand for extended periods of time without increasing pain, effects on his social life and activities, pain in traveling, and changing degrees of pain. However, there were no areas where the patient's condition worsened over time, demonstrating the ability for massage therapy to have neutral to positive effects on a person living with a herniated disc and sciatica.

Improvement over time relative to the patient was also tracked range of motion completed at the beginning and end of every session. The range of motion improved on all three aspects including quantity of movement, pain rating, and quality of movement. The table below shows pain scales at the beginning of the 1st session and beginning of the 6th session as a comparison. The table below highlights the areas where there was improvement and reduced pain.

Joint	Action	Rate Pain (04/21)		Rate Pain (06/25)	
		Right	**Left**	**Right**	**Left**
Hip	Flexion	0	0	0	0
Hip	Extension	3/10	0	0	0
Hip	Abduction	3/10	0	1/10	0
Hip	Adduction	0	0	0	0
Hip	Lateral Rotation	0	0	0	0
Hip	Medial Rotation	4/10	0	0	0
Lumbar Spine	Flexion	5/10	5/10	3/10	0
Lumbar Spine	Extension	3/10	3/10	0	0
Lumbar Spine	Lateral Flexion	0	4/10	0	0

Finally, it is important to address the patient's goals in this work. The patient wanted to perform bridge exercises while maintaining the same level of pain for the low back and mid-back. At the end of the last session, the patient informed the therapist that he had been able to complete the bridge exercises and that too in minimal pain so the goal was surpassed it not only quantity of bridge exercises but also in reduction of pain.

Limitations

There are several limitations to this study worth noting. The first and most important one is recognizing that the improvement of the patient over time may not be solely attributed to massage therapy. The patient was also actively seeing an acupuncturist and completing physical therapy recommended stretches and exercises at home. It is more likely that a combination of alternative medicine and at home self care improved the condition of the patient. The other limitation worth nothing is that not all sessions were designed exactly alike. Each session built upon the previous one and utilized varied or additional techniques to treat the patient, although there was some consistency in some approaches. This may not be a complete limitation and may offer the opportunity for therapists to craft their work on treating patients with similar conditions to the patient in the case. Finally, this case attempted to understand the physical aspects of a patient living with a herniated disc and sciatica and improvement over time. However, literature also showed that mental health is a huge aspect in managing such pain and would be worth capturing in future studies.

Summary

Massage therapy has a means to treat patients with both herniated discs and sciatica have not been studied extensively in the literature. Literature either focuses on patients with herniated discs or sciatica but not both. This study attempts to report on a case in which massage therapy was utilized to manage a patient with herniated disc and sciatica received from a vehicle blast during his military service. Based on the improvement of range of motion including pain levels over the course of the study as well as improvements in various aspects of life such as walking, sitting, sleeping, etc, massage therapy seems to be promising in improving the quality of life for such patients. Additional studies will be needed to understand the benefits of massage therapy for patients living with both a herniated disc and sciatica.

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[1] Bell, Jada. “Massage therapy helps to increase range of motion, decrease pain and assist in healing a client with low back pain and sciatica symptoms.” Journal of Bodywork and Movement Therapies, vol. 12, no. 3, July 2008, pp. 281–289, https://doi.org/10.1016/j.jbmt.2008.01.006.

[2] Davis, David, et al. “Sciatica.” StatPearls - National Institute of Health, U.S. National Library of Medicine, 4 Jan. 2024, www.ncbi.nlm.nih.gov/books/NBK507908/.

[3] Dydyk, Alexander M., et al. “Disc Herniation.” StatPearls - National Institute of Health, U.S. National Library of Medicine, 16 Jan. 2023, www.ncbi.nlm.nih.gov/books/NBK441822/.

[4] Javaheri, Ali Akbar Hashemi, et al. “The Effect of Combined Therapeutic Protocol (Exercise Therapy and Massage) on Quality of Life in Male Patients Suffering from Chronic Low Back Pain due to Lumbar Disc Herniation.” Iranian Journal of Health and Physical Activity, vol. 2, no. 2, 4 Sept. 2011, pp. 55–60.