

**Physical therapy management of a patient with
recurrent conversion disorder with a history of a
below-knee amputation: A case report**

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ABSTRACT:

Background and Purpose: Conversion disorder is a unique diagnosis uncommonly encountered in physical therapy (PT) practice. Patients present with physical deficits with no identifiable organic cause which are hypothesized to be due to a stressful life event. The use of PT may be used to not only treat the patient's functional deficits, but also identify the physical stressor and limit reoccurrence of conversion symptoms. Therefore, the purpose of this case report is to describe the PT management of a patient with recurrent conversion disorder presenting as quadriparesis with a history of a below-knee amputation.

Case Description: A 44 year old male was referred to an inpatient rehabilitation facility for atypical quadriparesis and recurrent conversion disorder following an acute fall at home. The patient participated in a progressive PT functional rehabilitation program that emphasized not only improving the patient's functional deficits, but also on treating the patient's physical stressor, thought to be the patient's deteriorating below-knee prosthesis.

Outcomes: The patient demonstrated improvement in all outcome measures with most significant improvements demonstrated by Functional Independence Measure (FIM) scores. The patient was able to be discharged just 12 days after admission to the inpatient rehabilitation unit.

Discussion: Previous studies on the PT management of conversion disorder have focused on treatment of the patient's symptoms. However, no literature has investigated the PT management of the patient's physical stressor, or cause of the conversion symptom, in addition to treating the patient's functional deficits. By identifying the cause of the stressor it is hypothesized that recurrence of conversion symptoms may be reduced.

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INTRODUCTION

Conversion disorder has broadly been defined as a physical disability without any organic basis. However the literature shows that many different definitions for conversion disorder have arose over the last 4,000 years when clinical descriptions of conversion disorder can first be traced.¹ Freud was one of the first to use the term “conversion” and referred to this diagnosis as a somatic symptom that was being substituted for a repressed idea.² More recently the American Psychiatric Association defined conversion disorder as symptoms or deficits affecting voluntary motor or sensory function that suggest a neurological or general medical condition.² Regardless of the definition, the medical literature seems to agree that patient’s who present with conversion disorder do not produce their symptoms for primary gain, but rather the symptoms are a result of an unconscious expression of a physical or psychological stressor. Patients with conversion disorder has been documented to present with a wide variety symptoms from bilateral quadriparesis, dystonia and ataxia to gait disorders, blindness and dysphasia.¹

Due to the neurological presentation of symptoms and functional loss often seen in patients with conversion disorder, there has been a steady increase over the last 20 years in the number of patients who are seen by physical therapy (PT) with a diagnosis of conversion disorder. Today, 3-5% of all new neurological outpatient referrals are unexplained³, that is- have no organic origin, and the incidence of conversion disorder is reported to be between 11 and 48 per 100,000 people in the general population.⁴ As more information has been obtained about this diagnosis in the medical field, the treatment of conversion disorder has also progressed. In the past, patients diagnosed with conversion disorder were seen primarily for psychiatric treatment. Today, however, patients with conversion disorder are most often treated for their functional

impairments in an inpatient rehabilitation setting, similar to how a patient who suffered a stroke or spinal cord injury would be treated with PT.

Although the understanding of conversion disorder has evolved over the last century, the literature to support PT management of conversion disorder is limited. Current literature that does exist regarding the PT treatment for a patient with conversion disorder is vague at best.¹⁻⁵ Current PT interventions for conversion disorder includes behavioral orientated (positive reinforcement for progression through stages of recovery) and modality orientated (EMG biofeedback) treatment. Psychiatric treatment (hypnosis, medication, group therapy) is still used and documented but is separated from PT in the professional literature.^{2, 4, 5}

Regardless of the treatment approach, no one treatment has been found to be more beneficial than another, and there is currently no literature regarding the best treatment approach to prevent reoccurrence of conversion symptoms. In addition, no research could be found that looks at the presentation of conversion disorder following a below-knee amputation and very little literature has demonstrated the use of PT for both the treatment of the conversion symptoms and treatment of the original source of symptoms; the physical stressor.

Therefore, the purpose of this case report is to describe the PT management of a patient with recurrent conversion disorder presenting as quadriparesis following an acute fall with a history of a below-knee amputation.

CASE DESCRIPTION

The patient was a 44 year old male who was referred to the inpatient rehabilitation floor of a local community hospital for atypical quadriparesis and possible conversion disorder following an acute fall at home. The patient presented with a significant past medical history

that included a below-knee amputation 20 years prior as a result of a hunting accident. Since that time the patient wore a below knee prosthesis. The patient's history also included multiple lumbar surgeries, hypertension, and an inpatient rehabilitation stay three and a half years previously for conversion disorder.

The patient's symptoms began five days prior to his admission to the inpatient rehabilitation floor. The patient was transferring from a tub to a toilet at his home when he felt dizzy, fell backward, and hit the back of his neck on the toilet. The patient reports that at the time of the fall he did not lose consciousness, but felt numbness, tingling and heaviness in his both his upper and lower extremities. After an undisclosed amount of time the patient reports that he regained some movement back in his extremities and was able to drive himself to the hospital. After being admitted to the hospital the patient underwent both MRI and X-ray imaging to determine the cause of the symptoms. Results of the imaging showed that the patient had local edema in and around his neck suggestive of muscular injury and multi-level facet and disk degeneration of C4 through C7. Imaging of the spinal cord was normal and cervical spine flexion and extension films were negative for any vertebral translation. Despite the limited diagnostic evidence for pathology, the patient continued to have significant weakness of his upper and lower extremities and was at that time admitted to the inpatient rehabilitation floor.

The patient's primary goal for PT was to return home independently. The patient gave written informed consent for treatment and the Health Insurance Portability and Accountability guidelines were followed. Carroll University Institutional Review Board approval was obtained to conduct this case study.

CLINICAL IMPRESSION I

Prior to admittance to the inpatient rehabilitation floor, differential diagnosis and clinical tests were conducted by the hospital medical staff, who hypothesized that the patient's symptoms may have been as a result of central cord syndrome. However, diagnostic imaging ruled this hypothesis out and the patient was determined to have atypical quadriparesis with probable conversion disorder.

Given the patient's previous history of conversion disorder, the patient was not made aware of his diagnosis but was told he had atypical quadriparesis with no apparent medical cause and would recover in a short period of time; just as he had following his last stay in the hospital (for conversion disorder). It was recommended by the physiatrist on this patient's case that the patient not be told about the suspected conversion disorder as the literature suggests that patient's are able to recover quickly when met by a positive and progressive multidisciplinary treatment approach, rather than dwelling on a psychiatric diagnosis.^{2,4,6} Based on the patient's atypical diagnosis, significant past medical history, and unique treatment approach, it was determined that this patient case would make an excellent case report in order to enhance the professional literature and provide a framework for the PT management of a patient with conversion disorder.

The plan for the PT examination was to perform all inpatient rehabilitation exam procedures commonly evaluated at that facility (mentation, balance, coordination, equipment assessment, strength, range of motion, transfers and functional mobility assessment, etc) paying extra attention to inconsistencies in measurements or reactions given by the patient in response to the tests and measurements performed by the physical therapist. In addition, the physiatrist on

the case asked that additional education be given to the patient regarding what the patient's performance expectations were in therapy (e.g. "You are able to perform static sitting with stand by assist today, we expect that you will be modified independent tomorrow"). It was hypothesized by the medical team that if a patient with conversion disorder was told what his/her expectations were, then they would progress to that level the next day.

EXAMINATION

The patient was evaluated by physical therapy on January 10, 2010, one day after his admittance to the inpatient rehabilitation floor.

The primary outcome measure and evaluation tool used to assess the patient's function in this case study was the Functional Independence Measure (FIM).^{7,8} The FIM is commonly used to measure functional gains, clinical progress and rehabilitation effectiveness.⁹ The FIM in its entirety is an 18 item, 7-level ordinal scale that rates activities of daily living from fully dependent to fully independent.^{7,8} In this particular facility, the physical therapist completed five parts of the FIM which included; bed mobility, transfers, level ambulation, stair ambulation and wheel chair mobility. The remaining parts of the FIM not completed by the physical therapist were completed by nursing staff, and occupational and speech therapists. FIM scores were recorded each day, and progress reports based off of FIM scores were reported weekly during care conferences. Several studies have demonstrated that the FIM is a reliable and valid tool in the assessment of human function.⁹⁻¹² The clinically meaningful change of 42 raw score points for the FIM was also reported by Hall et al.¹⁰ and was found to be statistically significant with a .95% confidence interval (confidence limits= 39.1-44.5) when assessing patients at admission

and discharge from an inpatient rehabilitation facility who were diagnosed with a traumatic brain injury. See Table 1 and Table 2 for complete initial evaluation results and FIM scores.

Manual muscle testing (MMT) according to Berryman Reese¹³ was performed globally to the patient's bilateral lower extremities. Significant muscle weakness was noted for all muscle groups tested, with the most severe limitations noted in the hip flexors muscles. See Table 3 for initial evaluation MMT results. Swartz et al.¹⁴ supported the use of MMT to assess global large muscle strength and also demonstrated that specific MMT grades (from poor plus to good) correspond to discrete differences in muscle strength scores. MMT has good interrater reliability when used to test hip and knee strength with correlation coefficients of .75 and .63 respectfully¹⁵ and has been found to have a high correlation with hand held dynamometry for muscles with a MMT grade of 4 or below.¹⁴

The patient was also assessed on his ability to independently don and doff his prosthesis. Ambulation, balance, strength, coordination and sensation were all globally assessed during both the initial evaluation and discharge summary, but were more specifically evaluated daily using the FIM, in the patient's ability to complete functional tasks.

Due to the patient's previous history of conversion disorder and lack of positive MRI and X-RAY findings to rule in central cord syndrome, the therapist was advised by the medical staff to watch closely for inconsistencies in measurements, throughout the entirety of the initial evaluations. The patient did demonstrate exaggerated pain responses to palpation and muscle "spasms" were only noted when direct attention was placed on a specific body region. The patient also demonstrated an enhanced response (loud grunt, holding breath) with all muscle strength tests and slight inconsistencies were noted between the patient's muscle strength scores and his use of his lower extremities during transfer activities.

CLINICAL IMPRESSION II

Due to negative clinical findings, (i.e. X-ray and MRI results) the patient's previous history of conversion disorder, inconsistencies in measurements during the initial evaluation, and limited evidence for central cord syndrome (decreased sensation, upper extremity involvement more than lower extremity involvement and disruption in bladder/bowel function) a diagnosis of exclusion for conversion disorder was made in collaboration with the patient's entire medical team. Based on the results of the clinical evaluation and resultant diagnosis of conversion disorder, this appeared to be a unique patient case to advance the professional literature on this relatively unknown diagnosis and treatment.

The treatment for this patient continued as planned by this patient's medical staff. The plan for PT was to focus on progressive functional activities. According to suggestions from the literature, the patient would be praised for his progress, and educated on what his expectations were for the next day. In addition, the patient's deteriorating below-knee prosthesis would be assessed by the prosthetist in an effort to resolve identifiable underlying stressors that may have triggered the acute conversion reaction.

INTERVENTION

The patient was seen by PT two times per day for 45 minutes each session as part of the facilities inpatient rehabilitation requirements. In addition to the PT treatment, the patient was also being seen by occupational therapy to improve upper extremity strength and mobility and by speech therapy to address cognition and memory. Physical therapy treatment for this patient was designed to provide a steady functional progression of skills needed for the patient to return home safely and independently. These main skill areas included; bed mobility, transfers,

ambulation, stair negotiation, car transfers, sitting and standing balance, and wheel chair mobility. As mentioned previously, the plan was to identify what the patient was able to do and then give the patient expectations for the following treatment session, as to what level of skill he would be expected to progress too. This type of treatment was designed to allow the patient an active role in his recovery and progress efficiently through the set of skills he would need to return home independently. In addition to this functional treatment program, focus was placed on strengthening the patient's residual limb and consultation was made with a local prosthetist to reconstruct the patient's badly worn and deteriorating prosthetic limb.

The patient was seen on the inpatient rehabilitation floor for a total of 12 days before he was discharged home independently. Initial treatment consisted of educating the patient on his expectations in therapy and helping him roll from right to left in bed. Transfers from his bed to a wheel chair required the use of a slide board and maximal assist of the therapist (performing 75% of the task). Initial therapy also consisted of active assistive cervical and trunk rotation, sitting balance with reaching outside of the patient's base of support, and basic lower extremity (LE) exercises. The patient was also re-educated on the use of a slide board to allow the patient to transfer himself from his bed to the wheel chair. The emphasis for all treatment interventions was placed on continuous positive reinforcement of achieved movements/skills and educating the patient on the expectations for the next treatment session.

As predicted by the medical staff the patient made very efficient progress and by the end of the patient's 1st week (Day 5 of PT) the patient was able to transfer from sit to stand and from the wheel chair to the mat with contact guard assist. The patient was walking with a standard wheeled walking from 50-150 feet (ft), able to sit independently and stand with just supervision for balance. The patient did demonstrate very slow movements, and often demonstrated a

delayed and exaggerated gait pattern that included excessive left hip flexion and intermittent right knee hyperextension. As the patient progressed through therapy, extra attention was given to improving the patient's gait pattern through verbal and tactile cueing.

By the end of week two (day 12 of PT) the patient was independent in bed mobility, sitting balance, standing balance with the right prosthetist on, and ambulating consistently 150ft with a wheeled walker. The patient required some supervision for safety and extra time with transfers. At this time the patient was independent with donning and doffing his prosthesis, propelling the wheel chair up a ramp and household distances (100ft or more) and with completing his independent LE home exercise program (see table 6). The patient did not have stairs at home, so this skill was not a primary focus of therapy. However, by the time of discharge the patient was able to negotiate step steps (wearing right LE prosthesis), with use of a right hand rail, and contact guard assist from the therapist.

As part of the patient's treatment plan, the medical staff deemed it necessary to address what they believed the patient's source of the somatic symptoms to be, the patient's lower limb amputation and deteriorating prosthesis. As a result, the local prosthetist was brought in to evaluate the patient and determine an appropriate prosthetic fit based on his functional needs. The patient planned to be seen by an outpatient rehabilitation facility closer to where he lived to continue to improve his LE strength, and enable him to be properly fit for a new below-knee prosthesis.

A detailed description of the functional progression of the primary skill areas focused on for the treatment of this patient can be found in Appendix 1.

OUTCOMES

Following the progressive functional treatment plan outlined by the medical staff, the patient was able to be discharged from the inpatient rehabilitation facility and returned home independently 12 days after admission, (two days earlier than estimated initially) and five days less than the patient's last inpatient rehabilitation hospital stay for conversion disorder.

At the time of discharge the patient had progressed from a level of complete dependency in transfers, ambulation, stairs negotiation and wheel chair navigation, at the initial evaluation, to being modified independent in transfers, ambulation, wheel chair negotiation, and requiring only contact guard assist for stair negotiation (the patient did not have stairs at home). The patient's FIM scores (See table 5) saw a dramatic change from day one to day 12, with the patient demonstrating a 71.43% improvement in transfers (5 FIM levels), 85.71% improvement in ambulation status (6 FIM levels), 71.43% improvement in wheel chair mobility (5 FIM levels) and 28.57% improvement in stair negotiation (2 levels of improvement). See table 4 for daily FIM scores and levels of improvement.

In additional to FIM scores, the patient's lower extremity strength (See table 3 for MMT scores) dramatically changed in 12 short days, a finding to be expected in a patient with conversion disorder, but otherwise not realistic. The patient did not demonstrate any type of ataxia or shakiness of leg movements when evaluating strength at time of discharge.

At the time of discharge, the patient's prosthesis was still being molded and the patient planned to continue with his prosthetic fittings as an outpatient.

DISCUSSION

This case report describes an efficient and effective functional treatment regimen for a patient with conversion disorder presenting with atypical quadriplegia. It also describes how PT interventions were not only intended to address the patient's functional deficits, but also aimed at identifying and treating the origin of the patient's conversion symptoms (either with physical therapy or referral to another medical provider)

The case report adds to the limited number of studies that have previously attempted to identify an effective PT treatment approach for patients with conversion disorder.^{1,2,3,4} Several studies^{1,2,4,16-18} have identified the use of a behavior management approach and found good to excellent outcomes for the treatment of a patient with conversion disorder. However, symptom resolution, relapse of conversion symptoms, and even treatment failure has been identified in patients undergoing this approach.

The most recent literature regarding PT and conversion disorder is a case series by Ness et al.⁴ The authors of this study proposed a set of PT management guidelines for conversion disorder. However, these guidelines fail to mention how this treatment approach is any more effective than others used in the past. In addition, the authors are unable to suggest how quickly to progress a patient through the proposed, "stages of recovery" and how this treatment approach and guidelines could possibly help to reduce the risk of relapse of conversion symptoms. More importantly, the authors fail to address how PT can not only treat a patient's conversion symptoms, but also treat the *cause* of the symptoms.

A frustrating aspect of treating a patient with conversion disorder may be the lack of knowledge or theoretical basis on which to base a patient's treatments on. Past literature,

therefore strictly looks at how a PT can treat the person's symptoms, but fails to look at how PT may be able to treat the original cause of the symptoms. This case report introduces a new way to look at the PT treatment of a patient with conversion disorder, in identifying not only the patient's functional deficits, but also identifying the source of the patient's symptoms.

There are several factors that may have contributed to the outcomes in this case which may be unrelated to the proposed treatment intervention and hypothesized theory regarding treating the patient's source of symptoms. First, because this patient had previously been seen by PT and the medical staff at this facility, they were better able to predict the patient's progression of recovery, possibly decreasing the amount of time the patient needed treatment. In addition, the diagnosis of conversion disorder was more easily made based on the patient's history and lack of organic findings. Lastly, there is no evidence to prove that the patient's deteriorating below-knee prosthesis was in fact the patient's "stressful life event" and source of symptoms; this was rather a hypothesis generated by the physical therapist and medical staff included in this patient's care. The patient also declined medical care by a psychologist, limiting any additional treatment or investigation into stressful life events that may have perpetuated the patient's conversion symptoms.

Although this case report provides the medical literature and more specifically PT professionals suggestions for management of a patient with conversion disorder, it does not given definitive answers about what should be done with similar cases in the future. Additional studies with high levels of evidence (i.e. randomized control trials) need to be done that consider identifying and treating the patient's source of symptoms and determining how it affects long term prognosis and relapse of symptoms.

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TABLES AND FIGURES

Table 1: Complete Initial Evaluation Scores for functional skills

Task	Assist level
Bed Mobility: Roll Left/ Roll Right	Minimal Assist
Bed Mobility: Sit to Supine	Moderate Assist of Two People
Bed Mobility: Supine to Sit	Moderate Assist of Two People
Transfers: Sit to stand	Moderate to Maximal Assist of Two People
Transfers: Wheel Chair to Mat	Moderate Assist of Two People
Ambulation	Not tested
Wheel Chair Mobility	Total Dependency

Table 2: Initial Evaluation FIM⁸ scores

FIM Category	Score
Transfers	1 (Requires two people assist)
Ambulation	0 (Patient unable to ambulate)
Wheel chair mobility	1 (Patient propels own wheel chair less than 50ft)
Stair Ambulation	0 (Patient unable to negotiate stairs)

Table 3: MMT¹³ scores at Initial Evaluation and Discharge

MMT*	Initial Evaluation (R/L)	Discharge (R/L)
Hip Flexion	1/1	3+/3+
Hip Extension (prone)	2-/2-	3+/3+
Hip Abduction	2-/2-	4-/3+
Hip Adduction	2-/2-	3+/3+
Knee Flexion (prone)	2-/2-	3+/4-
Knee Extension	2-/2-	3+/4
Ankle DF	NA/2-	NA/4
Ankle PF	NA/2-	NA/4
Ankle Inversion	NA/2-	NA/4
Ankle Eversion	NA/1	NA/4

*All MMT¹³ was performed in a gravity eliminated position.

NA = Not applicable

Table 4: Progression of functional activity from day 1 to day 12 of treatment according to the FIM⁸ scale (see numbering system below)

	Bed Mobility Sit ↔Supine	Bed Mobility Rolling	Transfers Sit↔Stand	Transfers W/C↔ Mat	Transfers Car	Ambulation	Stair negotiation	W/C mobility
Day 1	1	1	1	1	0	0	0	0
Day 2	3	4	3: //	4:SB	0	1: //	0	0
Day 3	4	5	4: //	5: SB	0	2: //	0	1
Day 4	5	5	4: //	5: SB	5: SB	4: 25ft with ww w/c follow	0	1
Day 5	5	5	4: MT	4: ww	0	4: 75ft with ww and w/c follow	0	1
Day 6	6	6	5: ww	4: ww	0	4: 100 ft with ww	0	3:
Day 7	6	6	5: ww	5: ww	0	4: 150ft with ww	0	4
Day 8								
Day 9	6	6	5: ww	5: ww	5	4:150 ft x 3 with ww	0	4: up ramp
Day 10	6	6	5: ww	5: ww	5	5: 150ft x 1 with ww	0	0
Day 11	6	6	5:ww	6: ww	5	6: 150 ft x 2 with ww	1: up and down 3 steps with right rail	5
Day 12	6	6	6: ww	6:ww	6	6: 150 ft x 3 with ww	2: up and down 6 steps with right rail	5

Table 4 Abbreviations:

- w/c = wheelchair
- ww = performed with wheeled walker
- // = performed in parallel bars
- SB = performed with sideboard
- MT= performed at mat table
- x = number for times performed

Table 4 FIM⁸ Numbering System based on Level of Assist Required by Therapist:

0= Activity does not occur

1=Total Dependency (Patient performs less than 25% of work) or requires assist of two people

- Pt goes up and down 4 or fewer steps
- Propels wheel chair less than 50 ft

2= Maximal Assist (Therapist does 75% or more of work)

- Pt goes up and down 4-6 steps
- Propels wheel chair minimum of 50ft

3=Moderate Assist (Therapist does 50% or more of work)

- Propels wheel chair a minimum of 150 ft

4= Minimal Assist (Therapist does 25% or less of work)

- Propels wheelchair minimum of 150 ft

5= Supervision or set up required for the patient

- Propels wheelchair a minimum of 150 feet or operates manual wheel chair independently for household distances (minimum of 50 ft)

6= Modified Independence (Extra time or assistive device needed to complete task)

7= Completely Independent

Table 5: FIM⁸ score at Initial evaluation and Discharge

FIM Score	Initial Evaluation	Discharge
Transfers	1	6
Ambulation	0	6
Wheel Chair negotiation	0	5
Stair ambulation	0	2

Table 6: Lower Extremity Home Exercise Program

1. Prone hip flexor stretch: 30 sec hold x 2 sets: 2 times per day
2. Straight leg raises: 20 reps x 1 set bilateral LE: 2 times per day
3. Quad sets: 20 reps x 1 set bilateral LE: 2 times per day
4. Side-lying Hip Extension: 20 reps x 1 set bilateral LE: 2 times per day
5. Side-lying Hip Abduction with yellow theraband resistance: 20 reps x 1 set bilateral LE: 2 times per day

6. Heel slides: 20 reps x 1 set bilateral LE

7. Sitting Hip flexion: 20 reps x 1 set bilateral LE

APPENDIX 1

The following is the functional detailed progression of the primary skill areas focused on for the treatment of this patient. A summary of the patient's progression is found in Table 5.

Bed mobility: Sit to Supine, Supine to Sit and Rolling

- Pt education on rolling left to right with use of bed rails
- Pt learned how to bring his feet off of the side of the bed and utilize his upper extremity (UE) to prop himself up into a sitting position.
- Utilize hospital rail for supine to sit with no therapist assist
- Progressed to use of UE for supine to sit and momentum of LE
- Sit to supine transfer with use of UE and LE momentum (first initiated with therapist assist to get LE onto bed)
- Patient brings one lower extremity onto the bed and therapist assist for the other
- No therapist assistance to bring LE onto bed, patient modified independent.

Transfers: Sit to stand, wheel chair to mat, and car transfers

- Slide board transfer from bed to a wheel chair with therapist assist
- Slide board transfers from bed to wheel chair with minimal to no therapist assist
- When patient was able to stand statically with minimal assistance, the patient was then progressed to transferring to the wheel chair with a pivot transfer.
- Progressed to utilizing a wheeled walker to transfer from sit to stand. (Sit to stand transfers were one of the last transfers to master for this patient due to his ataxic lower extremities, fall risk and flexed hip posture)
- Car transfers: The patient was educated on how to do this both with a slide board and with a pivot transfer as the patient had previously done both at home.

Ambulation: Level ground and stair negotiation:

- Standing statically (with prosthesis) first initiated in the parallel bars
- Steps in the parallel bars with a wheel chair follow.
- Walking length of parallel bars with wheel chair follow
- Walking length of parallel bars with no wheel chair follow
- Initiated walking with wheeled walker with wheel chair follow
- Walking with wheeled walker outside of parallel bars 10-15 feet with wheel chair follow
- Walking with wheeled walker 10-15 feet with no wheel chair follow
- Walking with wheeled walker 50 ft-150 feet
- Walking with wheeled walker 150ft multiple times with rest breaks in-between
- Walking with wheeled walker 150ft multiple times without rest breaks in-between.
- Gait training specifically focused on the quality of the patients gait pattern. The patient was educated on how to reduce his significant hip flexion during swing (patient appeared to be marching) with tactile and verbal cueing.

- The patient was educated on what “normal” gait pattern should look like and how “abnormal” gait could be contributing to the patient’s hip/back pain.
- Patient educated on stair negotiation when going out into the public.
- Initiated stepping in parallel bars
- 3 steps with use of both hand rails
- 6 steps with use of both hand rails

Wheel chair mobility: Level ground and ramp negotiation.

- The patient had been using a wheel chair at home and was familiar as to how navigate with a wheelchair. The focus for wheel chair mobility then, was to increase the distances that the patient was able to propel the wheel chair.
- The patient progressed to negotiating obstacles in the wheelchair (as would be expected at home) and lastly to propelling the wheelchair up and down a ramp.