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The Treatment Of Pes Anserine Syndrome Using ACL Injury Prevention Exercises: A Case Report

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PTH 608/708: 2018 Case Report Template

Name: Stephanie Chau

Abbreviated (Running) Title: The Treatment of Pes Anserine Syndrome using ACL Injury Prevention Exercises: A Case Report

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The Treatment of Pes Anserine Syndrome using ACL Injury Prevention Exercises: A Case Report

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The patient signed an informed consent allowing the use of medical information, pictures, and video footage for this report and received information on the institution's policies regarding the Health Insurance Portability and Accountability Act.

The author acknowledges faculty mentor Kirsten Buchanan PhD, PT, ATC for assistance with case report conceptualization, clinical instructor Lindsay Heidebrink PT, DPT for supervision and assistance with data collection, and the patient for his compliance and motivation to participate in this case report.

Key Words: Pes anserine syndrome/bursitis/tendonitis, therapeutic exercise, manual therapy

ABSTRACT

Background and Purpose: Pes anserine syndrome is the term that encompasses both pes anserine bursitis and pes anserine tendonitis. The exact incidence of pes anserine syndrome is unknown. However, the etiology has been hypothesized to be due to poor biomechanics and overuse. Treatment protocols with targeted exercises for rehabilitation of pes anserine syndrome have not been well documented. ACL injury prevention programs have been shown to significantly decrease ACL injuries by addressing proper hip, knee, and ankle alignment and biomechanics. It was postulated that utilization of an ACL injury prevention program could also be an effective strategy in addressing the faulty biomechanics of pes anserine syndrome. This case report provided a unique approach through utilization of exercises typically seen in an ACL injury prevention program to treat pes anserine syndrome.

Case Description: The patient was an active 32-year-old male with pes anserine syndrome. He received outpatient PT 1-2 times per week for 8 weeks for a total of 12 visits. Interventions included soft tissue mobilizations, stretching, strengthening, ACL injury prevention exercises, and patient education.

Outcomes: At discharge, the patient returned to his prior level of function without left knee pain or symptoms consistent with pes anserine syndrome. All tests and measures performed during initial evaluation demonstrated significant improvements at the time of discharge. Improvements included decreased worst pain (NPRS) from 8/10 – 0/10, improved function (LEFS) from 67/80 – 79/80, and improved left knee flexion ROM from 136° – 145°.

Discussion: The patient appeared to have benefited from the use of an ACL injury prevention exercises for treatment of pes anserine syndrome. Future research may consider focusing on developing a standardized treatment approach for pes anserine syndrome.

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BACKGROUND and PURPOSE

The pes anserinus is the common tendinous insertion point of three muscles in the thigh including the (1) sartorious, (2) gracilis, and (3) semitendinous located roughly 2 inches below the medial joint line of the knee, with the pes anserine bursa located deep to the pes anserinus. The proximity of these two structures renders differentiating between pes anserine bursitis versus tendonitis difficult clinically, and also inconsequential as the course of treatment is currently the same. The term, "Pes anserine syndrome" (PAS) has been proposed to describe this condition due to the lack of knowledge of its pathology. Various studies regarding patients with pain at the pes anserine fail to discriminate the true structure at fault but instead label the condition as "anserine bursitis".[1] As this has remained true to this date, this case report accepted this term and its use. The incidence of PAS has yet to be determined, as studies have not been undertaken. However, the diagnosis is most commonly seen with overweight females and among the young and active population due to overuse.[2] It has been postulated that obese females are more susceptible to PAS rather than males due to the increased stress on the medial knee from the greater Q angle.[2] An increased Q angle can result in a knee valgus position that increases pressure on the medial aspect of the knee during weight bearing activities. This results in an increased likelihood of injuries to the structures of the medial knee if there is a deficit in strength, proprioception, balance, and biomechanics in order to maintain adequate hip, knee, and ankle alignment.

Anterior cruciate ligament (ACL) injury prevention programs have been utilized and effective in decreasing the risk of ACL injuries by 52% in females and 85% in males.[3] The programs that are most effective address a number of factors including biomechanics,

compliance, dosage, feedback, and exercise variety consisting of plyometric, neuromuscular, and strength training.[3] This exercise variety is considered to be highly important in an ACL injury prevention program as each type of training challenges and works towards reducing risk of ligamentous injuries, improving joint stability during dynamic activities, achieving optimal motor control patterns, restoring proper hip, knee, and ankle alignment and, perhaps most importantly, increasing strength.

There is limited literature available for the treatment and rehabilitation of PAS. Considering the suspected contribution lower extremity mal-alignment has on PAS, ACL injury prevention exercises, would, in theory, improve outcomes. The purpose of this case report was to investigate outcomes for a patient with PAS using a comprehensive physical therapy plan of care (POC) that included exercises commonly used in ACL injury prevention programs.

CASE DESCRIPTION

Patient History and Systems Review

The patient provided written informed consent to participate in this case report. The patient was a 32-year-old male referred for outpatient physical therapy (PT) by his M.D. for evaluation and treatment of his left knee with a diagnosis of a sprain of the medial collateral ligament of the left knee. The patient presented with increased left knee pain that started 6 months prior to the initial evaluation (IE) with no mechanism of injury. The patient described his pain as a "mashing" pain when exacerbated, localized at the pes anserine and denied pain at the joint line. The pain was reproduced with activity (most severe when running >3 miles, initiated around mile 2 and with exercises at the gym) and when side-lying on the right. Upon further questioning, the pain was not reproduced with any other motions including stair negotiation. Following exacerbation of symptoms, pain was present for 24 – 48 hours and resulted in

difficulties in any activities involving his left knee. The patient had been taking ibuprofen as needed for pain management. A magnetic resonance imaging (MRI) scan taken four days prior to the IE revealed no ligamentous or meniscal damage.

Past medical history revealed that the patient originally injured his left knee in 2014 while running on an incline. The patient denied any twisting or buckling at the moment of injury in 2014 but felt intense pain. He had received PT for treatment of his left knee for the same symptoms at that time with good outcomes and had been self-managing his symptoms since. Prior to this episode of knee pain, the patient was fully independent with all ADL's, work-related activities, and recreational hobbies. The patient was able to run 3-5 miles, participate in team sports, and go to the gym pain free. The patient was a father of a 2-year-old son and worked at home as a sales representative.

The patient's chief complaint was pain with activity and inability to sleep on his right side without pain. His goals for PT consisted of returning to his active lifestyle with the ability to run and go to the gym pain free. Please refer to Table 1 for the systems review results.

Examination – Tests and Measures

All findings of the tests and measures performed can be found in Table 2. The Lower Extremity Functional Scale (LEFS) was performed to quantify the patient's subjective level of dysfunction and limitations due to his knee pain. A maximum score of 80 can be interpreted as no dysfunction or high functioning and has been proven have excellent reliability and validity as an outcome measure.[4]

Pain at its worst, best, and at the current level was assessed verbally using the Numeric Pain Rating Scale (NPRS) with "zero" meaning no pain and "ten" meaning pain that would require hospitalization. Pain was assessed intermittently and compared in order to measure

change in pain. The NPRS has been reported to have an excellent reliability, validity, and responsiveness.[5]

Palpation was performed on the patient along the medial joint line and the pes anserine. The patient presented with marked tenderness to palpation along the pes anserine and reported none at the medial joint line.

Range of motion (ROM) was measured using an EZ Read Jamar Goniometer (Patterson Medical, Danbury, CT) with the standardized methods and procedures as described by Norkin and White[6].

Gross lower extremity (LE) strength was assessed with manual muscle testing, which was performed with the methods as described by Kendall[7] and has been reported to have high interrater and intrarater reliability.[8]

Flexibility of the hamstrings, quadriceps, and hip flexors were measured with the Thomas test, Kendall test, and 90/90 Hamstring test. **Reliability and validity**

Pelvic alignment was assessed using the Weber Barstow maneuver test in addition to palpation of the bilateral anterior superior iliac spine (ASIS) and posterior superior iliac spine (PSIS). Comparison of the bilateral medial malleoli along the bilateral ASIS and PSIS were used to assess alignment abnormalities of the sacrum and ilium. The reliability of pelvic asymmetry assessment with utilization of bony landmarks have been demonstrated to be low to moderate with both inter and intrarater reliability. However, intrarater reliability was demonstrated to be slightly higher than interrater reliability.[9]

The mobility of the lumbar spine with flexion and extension was assessed segmentally in sitting with active motion palpation starting inferiorly at the sacral sulcus and ending at the thoraco-lumbar junction. The patient performed two motions while being palpated (1) a slump forward while maintaining contact of the bilateral ischial tuberosities on the plinth and (2) a

relative extension movement of straightening up from the slump. Assessment consisted of comparing motion felt at each segment to the expected mobility of that segment with comparisons between segments above and below and between asymmetries from right to left. A review of reliability studies of spinal mobility testing by Huijbregts determined that use of active motion palpation demonstrates an intrarater reliability of moderate/substantial agreement and a poor to fair agreement in terms of interrater reliability.[10]

Gait was assessed with the patient ambulating in the carpeted hallway of the clinic with sneakers on. While the utilization of observational gait analysis has not demonstrated high validity and reliability, it is easily administered, pragmatic, and provided an overall depiction of noted gait deficits and impairments.[11]

Clinical Impression: Evaluation, Diagnosis, and Prognosis

Following the IE, the patient's findings and presentation was inconsistent with the diagnosis of a sprain of the left medial collateral ligament of the knee secondary to the reported mechanism of injury and location of pain. The International Classification of Disease tenth edition (ICD-10) was used to determine a medical diagnosis of M76.899 (other specified enthesopathies of left lower limb, excluding foot) and M70.52 (other bursitis of knee, left knee) and PT diagnosis of M25.562 (Pain in left knee) and M62.81 (Muscle weakness [generalized]).

Following the examination, the patient presented with increased left knee pain, decreased left LE strength compared to the right, positive findings with muscle length testing on the bilateral iliopsoas, quadriceps, and hamstrings, hypomobile lumbar spine, abnormal pelvic alignment, decreased activity tolerance, and gait deficits. These limitations and impairments reportedly prevented the patient from sleeping on his right side, attending the gym, and running greater than 2-3 miles pain free. Based on these findings and absence of red flags that would

merit referral or outside consultations, skilled PT was warranted and appropriate for treatment. The patient was a good candidate for treatment with a good prognosis due to his high level of motivation to achieve his PT goals, excellent compliance with his prescribed home exercise program (HEP), prior good outcome from previous therapy treatment, and high prior level of function (PLF). The decision to proceed with skilled PT resulted in a POC that included therapeutic exercises, manual therapy, neuromuscular rehabilitation, and patient education. The patient was seen in skilled PT for 45 minute – 1-hour sessions for approximately 8 weeks. He was expected to perform the HEP prescribed to him once per day on the days not scheduled for PT. Re-evaluations using the tests and measures obtained at the IE were used to measure functional improvements. Short and long-term goals were created in conjunction with active participation and agreement of the patient (Table 3).

INTERVENTIONS AND PLAN OF CARE

Coordination, Communication, and Documentation

Coordination, communication, and documentation were all performed between the student PT, supervising PT, referring physician, and patient through a combination of an electronic medical record (EMR) software system (WebPT, Pheonix, AZ), inter-personal communication, and telephone communication. The referring physician received notes from the IE, re-evaluation, and discharge that were faxed through WebPT to inform him of the patient's functional progress. The student PT directed every treatment session and documented the procedures and exercises performed following each session. The supervising PT was on hand at the facility for any necessary consultation or guidance.

Patient-related instructions were given consistently at each visit (IE, daily visit, re-evaluations, and at discharge). Instructions included patient education with review of

examination findings, the anatomy of the knee, pathology of diagnosis, clinical reasoning of treatment strategy, and instruction of proper form and technique of HEP exercises. The patient was advised to discontinue running at the time of IE to allow the knee to rest and decrease further irritation until recommended otherwise.

Procedural Interventions

All procedural interventions performed can be found in Table 4. All prescribed HEP with instructions and pictures can be found in Table 5. The patient attended skilled PT 1-2 times per week for 1 hour per treatment session. He attended 12 sessions in total over the course of 8 weeks. Procedural interventions included manual therapy, therapeutic exercises, and neuromuscular re-education. The patient demonstrated excellent compliance with his HEP as evidenced by his recall of exercises, rapid progression of strengthening exercises, and progression towards goals.

Manual therapy consisted of soft tissue mobilization (STM) to the musculature of the lumbar spine and left knee in order to decrease tissue density.

Therapeutic exercises and neuromuscular re-education consisted of stretches, strengthening, and biomechanics. Stretches focused on improving mobility of the lumbar spine and increasing flexibility of the bilateral hamstrings, hip flexors, and quadriceps. Static stretches were maintained for 3 sets of 30-second holds adhering to the findings of the study by Bandy[13]. The study provided strong evidence that a 30 second hold was a sufficient duration to increase hamstring flexibility and increase range of motion.[13] Strengthening exercises focused on progressing core strength and LE strength. LE strengthening consisted of eccentric exercises of the muscles of the pes anserine and strengthening of the gluteal muscles and quadriceps. Studies and case reports performed by Alfredson[14], Cushman[15], and Rauseo[16] have provided evidence for

the use of eccentric exercises in order to effectively rehabilitate tendonitis of the achilles tendon, hamstring, and iliopsoas respectively. When squatting exercises were introduced, the patient demonstrated a tendency to perform movement with a knee valgus motion. This indicated instability of the hip secondary to weakness of the gluteal muscles and hip external rotators, inadequate motor control patterns, and improper hip, knee, ankle alignment with dynamic activities. This prompted the introduction of exercises commonly used in ACL injury prevention programs. These exercises included bilateral squats, unilateral squats, 3 way toe taps, unilateral hops, and multi-directional hops. Specific verbal and tactile cueing was given for hip, knee, and ankle alignment to prevent valgus collapsing of the knee, maintenance of a neutral pelvis, and proper technique.

TIMELINE

Please refer to Table 6 for all the timeline of all relevant data from this episode of care.

OUTCOMES

Patient outcomes were determined by comparing the results of the tests and measures performed at the time of the IE and at discharge (Table 2 for comparison). The patient demonstrated improvements in functional mobility, pain, tenderness to palpation, pain free knee ROM, hip and knee strength, flexibility, pelvic alignment, spinal mobility, gait, and hip, knee, and ankle alignment during dynamic activities. At the time of discharge, the patient was able to run pain free for 2.5 miles and reported no limitations in any other aspect of his life. He was motivated and willing to continue his HEP in order to maintain his level of function and continue to progress his ability to run pain free for 3 miles.

DISCUSSION

This case report met the intended purpose by detailing the outcomes of the comprehensive PT management of a patient with PAS. The POC was determined through the combination of patient goals, research evidence, and clinical judgment. The results of this case report suggested that the use of ACL injury prevention exercises was beneficial for the management of this particular patient with PAS. At the introduction of squatting exercises, the patient demonstrated improper alignment control that was more pronounced with fatigue. By discharge, the patient was noted with significantly improved control with proper alignment. The improvements in pain and function may be due to his improvement in alignment motor control pattern of proper hip, knee, and ankle alignment during dynamic activities. This echoes the same success seen in the reduction in ACL injuries using ACL injury prevention exercises. Strengths of this case report included patient motivation and adherence to the POC and HEP.

As noted, there literature for the treatment and rehabilitation of PAS is limited. Considering the positive outcomes of this case report, future research into the effectiveness of exercises commonly used in ACL injury prevention programs on patients with PAS is suggested. Future research may also investigate which intervention or interventions from this comprehensive program was most effective in rehabilitating PAS. This would allow for the development of a standardized treatment protocol for optimal outcomes for patients with PAS.

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TABLES AND FIGURES

Table 1: Systems Review

Cardiovascular/Pulmonary	Not impaired
Musculoskeletal	Decreased general L LE strength Pain with active left knee flexion
Neuromuscular	Gait deficits included lack of hip extension, pronated left foot, and lack of pelvic rotation
Integumentary	Not impaired, no increased swelling noted.
Communication	Not impaired
Affect, Cognition, Language, Learning Style	Not impaired Learning style: visual, auditory, kinesthetic

Table 2: Tests & Measures

Tests & Measures		**Initial Evaluation Results**		**Discharge Results**	
Lower Extremity Functional Scale		67/80		79/80	
Numeric Pain Rating Scale (0-10)		Best: 0/10 Worst: 8/10 Current: 2/10		Best: 0/10 Worst: 0/10 Current: 0/10	
Palpation		Tenderness to palpation at the pes anserine		No tenderness to palpation at the pes anserine	
Knee AROM		Right	Left	Right	Left
	Flexion	140	136 (pain)	145	145
	Extension	0	0	0	0
Manual Muscle Testing		Right	Left	Right	Left
Hip					
	Flexion	4+/5	4/5	5/5	5/5
	Extension	5/5	4+/5	5/5	5-/5
	Abduction	5/5	4+/5	5/5	5/5

	Adduction	5/5	4+/5	5/5	5/5
	Internal Rotation	5/5	5/5	5/5	5/5
	External Rotation	5/5	4+/5	5/5	5/5
Knee					
	Flexion	5/5	4+/5	5/5	5/5
	Extension	5/5	4+/5	5/5	5/5
Ankle					
	Dorsiflexion	5/5	5/5	5/5	5/5
	Plantarflexion	5/5	5/5	5/5	5/5
Flexibility (Muscle Length Testing)		Right	Left	Right	Left
Thomas Test		(+) Rectus femoris, (+) iliopsoas	(+) Rectus femoris, (+) iliopsoas	Negative	Negative
90/90 Hamstring Flexibility		Lacking 10	Lacking 10	0	Lacking 5
Pelvic Alignment Testing		Abnormal. Shorter left medial malleoli, left ASIS higher		Level	
Spinal Mobility Test:		Hypomobile lumbar spine (L1 – L5) with flexion and extension. Slightly rotated to the right		Normal through L1-5	
Gait Analysis		Lacks hip extension, pronated left foot, lack of pelvic rotation		Pronated left foot	

Table 3: Short and Long Term Goals

Short Term Goals (4 Weeks)	**Long Term Goals (8 Weeks)**
1: Patient will decrease pain levels to 4/10 at its worst as measure by the VRS scale 2: The patient will present with decreased tenderness to palpation along the pes anserine area in order to facilitate improved activity tolerance	1: Patient will decrease pain levels to 0-1/10 at its worst as measure by the VRS scale in order to be able to run/ attend the gym with minimal to no pain. 2: Patient will improve bilateral iliopsoas and quad flexibility as demonstrated by a negative finding with the Thomas test in order to facilitate improved gait mechanics. 3: The patient will demonstrate improved lumbar spine mobility as demonstrated by a finding of normal with mobility testing 4: The patient will return to the gym and running > 3 miles with no pain 5: The patient will demonstrate improved L LE strength of 5/5 MMT grading in order to

	facilitate return to activities

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371 **Table 4: Procedural Interventions**

6/8/2018: IE	6/12/2018: Rx 1	6/15/2018: Rx 2	6/19/2018: Rx 3	6/22/2018: Rx 4	6/26/2018: Rx 5
Stretches	Stretches	Stretches	Stretches	Stretches	Stretches
	Abdominal Brace (AB)	AB with marches	AB with marches	AB with toe taps	AB with toe taps
	Resisted side steps	Resisted side steps	Resisted side steps	Resisted side steps	Resisted side steps
				Hamstring eccentric	Hamstring eccentric
					Hip adductor eccentric
					Bridge
					Double legged squat
6/29/2018: Rx 6	**7/6/2018: Rx 7**	**7/10/2018: RE**	**7/17/2018: Rx 9**	**7/31/2018: Rx 10**	**8/3/2018: D/C**
Stretches	Stretches	Stretches	Stretches	Stretches	
AB with toe taps	Dead bug	Dead bug	Dead bug	Dead bug	
Resisted side steps	Hamstring eccentric	Hamstring eccentric	Hamstring eccentric	Hamstring eccentric	
Hamstring eccentric	Hip adductor eccentric	Hip adductor eccentric	Hip adductor eccentric	Hip adductor eccentric	
Hip adductor eccentric	Bridge	Triple threat	Triple threat	Triple threat	
Bridge	Double legged squat	Double legged squat	Single leg squat	Single leg squat	
Double legged squat	Single leg stance 3 way toe tap	Single leg stance 3 way toe tap	Single leg stance 3 way toe tap	Single leg stance 3 way toe tap	
Single leg stance 3 way toe tap			Single leg mini forward hops	Single leg mini forward hops	
				Lateral bounds	

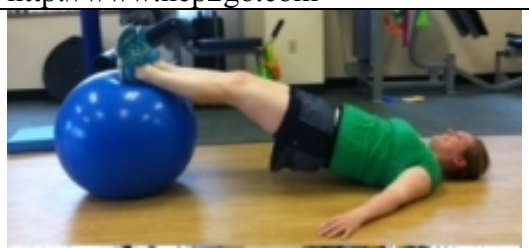
372 **Table 5: HEP**

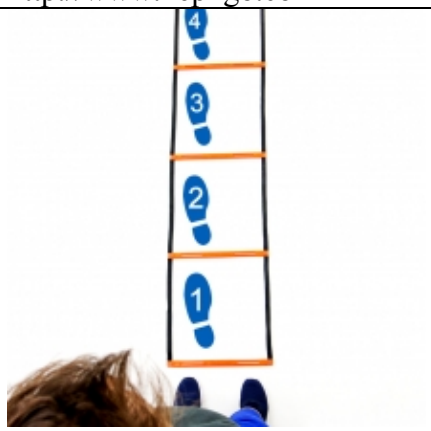
Exercise	Parameter	Diagram
Stretches		
Lower trunk rotation	Frequency: 1 time/day Rep: 3 Hold: 30 sec	 http://www.hep2go.com
3 way prayer	Frequency: 1 time/day Rep: 3 Hold: 30 sec	 http://www.hep2go.com
Cat and camel	Frequency: 1 time/day Rep: 10 Hold 5 sec	

		http://www.hep2go.com
Hamstring	Frequency: 1 time/day Rep: 3 Hold: 30 sec	 http://www.hep2go.com
Hip Flexor	Frequency: 1 time/day Rep: 3 Hold: 30 sec	 http://www.hep2go.com
Quadriceps	Frequency: 1 time/day Rep: 3 Hold: 30 sec	 http://www.hep2go.com
Therapeutic Exercises and ACL Injury Prevention Protocol Exercises		

Abdominal brace (AB)	Frequency: 1 time/day Set: 2 Rep: 10 Hold: 10 sec	 http://www.hep2go.com
AB with marches	Frequency: 1 time/day Set: 2 Rep: 10	 http://www.hep2go.com
AB with toe taps	Frequency: 1 time/day Set: 2 Rep: 10	  http://www.hep2go.com

Dead bug	Frequency: 1 time/day Set: 2 Rep: 10	  http://www.hep2go.com
Resisted side steps	Frequency: 1 time/day Set: 2 Rep: 15 steps each direction	 http://www.hep2go.com
Hamstring eccentric	Frequency: 1 time/day Set: 2 Rep: 10	 http://www.hep2go.com

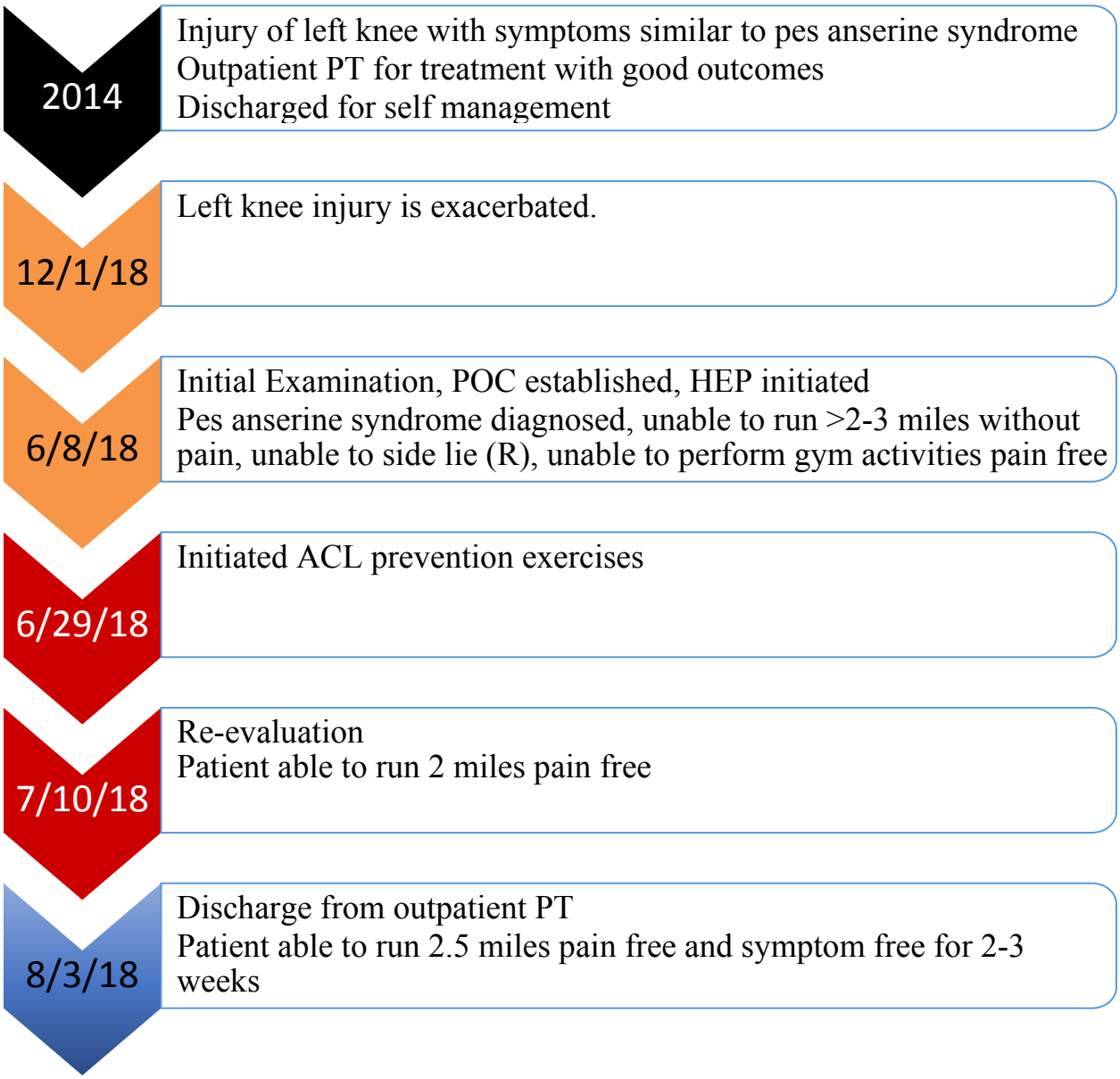
Hip adductor eccentrics	Frequency: 1 time/day Set: 2 Rep: 10	 http://www.hep2go.com
Bridge	Frequency: 1 time/day Set: 2 Rep: 10	  http://www.hep2go.com
Triple threat	Frequency: 1 time/day Set: 2 Rep: 10	  http://www.hep2go.com
Double legged squat	Frequency: 1 time/day Set: 2 Rep: 10	  http://www.hep2go.com

Single leg squat	Frequency: 1 time/day Set: 2 Rep: 10	 http://www.hep2go.com
Single leg stance 3 way toe tap	Frequency: 1 time/day Set: 2 Rep: 10	 http://www.hep2go.com
Single leg mini forward hops	Frequency: 1 time/day Set: 2 Rep: 10	 http://www.hep2go.com
Lateral bounds	Frequency: 1 time/day Set: 2 Rep: 10	

		http://www.hep2go.com

Table 6: Timeline

Patient Description: 32 year old male with PT diagnosis of pes anserine svndrome



CARE Checklist

Final Parts One & Two, PTH708: Completed for the final submission to document the locations of key case report components.

CARE Content Area	Page
1. **Title** – The area of focus and "case report" should appear in the title	3
2. **Key Words** – Two to five key words that identify topics in this case report	3
3. **Abstract** – (structure or unstructured) a. Introduction – What is unique and why is it important? b. The patient's main concerns and important clinical findings. c. The main diagnoses, interventions, and outcomes. d. Conclusion—What are one or more "take-away" lessons?	4
4. **Introduction** – Briefly summarize why this case is unique with medical literature references.	5
5. **Patient Information** a. De-identified demographic and other patient information.	6

b. Main concerns and symptoms of the patient. c. Medical, family, and psychosocial history including genetic information. d. Relevant past interventions and their outcomes.	
6. **Clinical Findings** – Relevant physical examination (PE) and other clinical findings	7
7. **Timeline** – Relevant data from this episode of care organized as a timeline (figure or table).	12
8. **Diagnostic Assessment** a. Diagnostic methods (PE, laboratory testing, imaging, surveys). b. Diagnostic challenges. c. Diagnostic reasoning including differential diagnosis. d. Prognostic characteristics when applicable.	9
9. **Therapeutic Intervention** a. Types of intervention (pharmacologic, surgical, preventive). b. Administration of intervention (dosage, strength, duration). c. Changes in the interventions with explanations.	11

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10. **Follow-up and Outcomes** a. Clinician and patient-assessed outcomes when appropriate. b. Important follow-up diagnostic and other test results. c. Intervention adherence and tolerability (how was this assessed)? d. Adverse and unanticipated events.	12
11. **Discussion** a. Strengths and limitations in your approach to this case. b. Discussion of the relevant medical literature. c. The rationale for your conclusions. d. The primary "take-away" lessons from this case report.	13
12. **Patient Perspective** – The patient can share their perspective on their case.	N/A
13. **Informed Consent** – The patient should give informed consent.	6

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