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Who: 16 year-old male cross country runner, diagnosed with a fibular stress fracture.

What: Physical therapy program included use of the AlterG® Anti-Gravity Treadmill™ twice per week, in addition to physical therapy sessions for manual therapy and therapeutic exercises.

Why: Body weight support was used because this patient had a history positive for overuse injuries in the past. The AlterG was used to establish confidence, maintain fitness, and manage symptoms/swelling, while progressively increasing weight bearing while running.

Introduction

14 year-old active teenager was playing basketball in February and injured his left hip. Initially, it was treated as a groin strain, but later it was determined that he had a slipped capital femoral epiphysis. The patient underwent surgery to fixate in May, and was referred to physical therapy 3 months later. The patient wished to return to high school sports of basketball, football, and baseball.

Goals

- Increase strength of lower extremities and core stabilisers.
- Restore full pain free hip range of motion and normal gait mechanics
- Improve tolerance to long duration walking and loading while running
- Develop cardiovascular conditioning for return to sport
- Return to football, basketball, and baseball.

History

Patient first felt hip pain while playing basketball in February. He thought it was a groin strain and continued to play on it. After further assessment, it was determined that he had a slipped capital femoral epiphysis (SCFE) and he underwent surgical fixation. Patient presented in therapy with minimal pain, but had an antalgic gait with decreased stance time, step length, and speed on the involved lower extremity. In addition, he had decreased hip and core strength, decreased hip ROM, decreased hip joint mobility, and poor balance. Treatment provided consisted of: manual therapy (soft tissue mobilization, joint mobilization, and facilitated stretching), therapeutic exercises for increasing lower extremity strength, especially for left hip abduction and extension, core strengthening, proprioceptive work and AlterG gait training.

Considerations

Complications of Slipped capital femoral epiphysis (SCFE) are avascular necrosis and chondrolysis, therefore, strict monitoring of symptoms was necessary. Patient started physical therapy 3 months post-op, presenting with poor gait patterns. The patient was instructed to be weight-bearing as tolerated (WBAT) per directions. Pain and latent soreness were considered when progressing on the AlterG.

Results

The patient was seen in physical therapy for a total of 17 sessions for 9 weeks approximately twice per week. He had very few pain complaints throughout the rehab process, though he did complain of "stiffness." His rehabilitation focused on functional training and range of motion. The AlterG was introduced on the first visit because the patient was walking with an impaired gait in Full Weight Bearing. In consideration that he is a big, but young athlete, the weight bearing % was low initially, but progressed as appropriate based on patient tolerance and improvements in his gait pattern. Patient was able to progress into running/jogging by week 3. By week 7, he was running sprints at 85% weight bearing. At the time of discharge, 2 weeks later, his doctor released him to all his sport activities.



Progression Table

Weeks (post-op)	Program (% WB)	Speed	Incline %	Time (mins.)	Frequency
12	50% walking	2.4	0	15	Twice per week
13	60%	2.7	3	20	Twice per week
14	75%	Jog	2	5	Twice per week
	70%	Jump	2	5	
	70%	Jog	2	5	
15	85%	Jog	3	6	Twice per week
	85%	Jump	3	3	
	70%	Jog	3	10	
16	85%	Warm Up	3	50	Twice per week
		Hop	0	30sec. x 5	
		Sprint	0	3	
		Cool Down	0	5	
17	85%	Jog	5	15	Twice per week
18	70%	Sprints	0	30sec. x 5	Twice per week
	80%	Sprints	0	30sec. x 5	
	80%	Sprints	0	30sec. x 5	