ALTER G® Case Study

Hip Labrum Repair and Microfracture

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Who: 25-year-old visually impaired sprinter s/p Hip Labral Repair and Microfracture Surgery.

What: Body weight support was incorporated into the rehabilitation protocol once patient cleared for Weight Bearing.

Why: The AlterG Anti-Gravity Treadmill™ was incorporated into the athlete's rehabilitation plan to maintain fitness, manage gait, and progressively increase impact on the extremity.

Introduction

25 y/o male visually impaired sprinter, diagnosed with a superior anterior labrum tear. Running is a repetitive activity, sprinting is an explosive and high impact activity.

1. Athlete was treated conservatively for 4 months for chronic hip pain.
2. Diagnostic radiology showed a hip labral tear, athlete chose surgical intervention.

Goals

- Following release to weight-bearing, incorporate de-weighting into rehabilitation protocol.
- Develop a progressive return to activity.
- Maintain fitness and function during rehabilitation.
- Return to participation.

History

Plan

- Athlete was diagnosed with a hip labral tear, with defects to the chondral surface.
- Upon consultation with treating physician and review of diagnostic imaging, the athlete elected to undergo surgery to repair the torn hip labrum. A microfracture procedure was also performed.
- Athlete underwent 3 weeks of inpatient physical therapy because he is visually impaired.
- After physician release to partial weight-bearing, a complementary conditioning program was developed, incorporating the AlterG Anti-Gravity Treadmill.
- Along with traditional medical treatment (modalities, therapeutic exercise and NSAID's), the AlterG Anti-Gravity Treadmill was added to the treatment protocol.
- Program duration was for 7 months.
- AlterG Anti-Gravity Treadmill was incorporated after 3 weeks of rehabilitation once athlete was cleared for partial weight-bearing.
- Athlete achieved desired competition goals and returned to full participation.

Considerations

- Pain/ soreness levels were considered and used to gauge weight percentage and speed. Pain level reported by athlete was not to exceed 4 on a scale of 1-10 during Phase I, and not to exceed 3 on a scale of 1-10 during Phases II-IV
- Gait training was incorporated into treatment protocol
- Athlete feedback was considered prior to each workout

Results

The athlete was released for return to sport by the treating physician after 28 weeks of rehabilitation. The athlete achieved the goals of the rehabilitation plan, incorporating a progressive sport specific conditioning plan to transition the athlete to full participation. The AlterG Anti-Gravity Treadmill was incorporated into the athlete's rehabilitation plan to maintain fitness, manage gait and progressively increase impact on the extremity. The athlete resumed full activity after release from rehabilitation and continued using the AlterG Anti-Gravity Treadmill as part of the reconditioning and sport specific training program.

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Phase	Programs
	Partial Weight-bearing
	Range of Motion
	Gait evaluation/re-education
Phase I Week 1-3	Neuromuscular activation
	Neuromuscular conditioning
	Pain Management
	Proprioception
	Weight-bearing as tolerated
	Emphasize heel to toe walk
	Pain free activity
	Proprioception
Phase I Week 1-3	Initiate cardiovascular training
	Increase load bearing
	Increase volume
	Increase strike frequency
	Increase musculoskeletal strength and endurance
	Decrease incline of surface
	Preparation
	Full foot strike
	Increase intrinsic muscular function
	Proprioception/Technique
Phase I Week 1-3	Maintain volume
	Increase intensity/ load
	Increase musculoskeletal strength and conditioning
	Increase cardiovascular training
	Decrease angle of surface
	Return to activity
	Increase load and intensity
	Challenge Proprioception
Phase IV Week 24- 28	Maintain Volume
	Maintain Conditioning
	Maintain Technique
	Maintain angle of surface

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The following table represents the patient's actual device settings during his rehabilitation, beginning post-op week 4, based on his individual progress and pain levels. Please consult a physician before initiating any exercise or rehabilitation program.

Weeks	Time (min.)	Speed (mph)	Frequency	BW %	Incline
1	8	1.5	1 x daily	40	5 degrees
2	10	2.0	1 x daily	45	5 degrees
3	12	2.0	1 x daily	50	5 degrees
4	14	2.5	1 x daily	50	5 degrees
5	16	2.5	1 x daily	55	5 degrees
6	16	2.5	1 x daily	55	5 degrees
7	18	2.0 - 3.0	1 x daily	60	4 degrees
8	20	2.0 - 3.0	1 x daily	60	4 degrees
9	22	2.0 - 3.0	1 x daily	65	4 degrees
10	23	3.0	1 x daily	65	4 degrees
11	24	3.0	1 x daily	65	4 degrees
12	25	3.0	1 x daily	65	3 degrees
13	20	3.5	1 x daily	70	3 degrees
14	22	3.5	1 x daily	70	3 degrees
15	24	3.5	1 x daily	70	3 degrees
16	25	3.5	1 x daily	70	2 degrees
17	20	4.0	1 x daily	65	2 degrees
18	22	4.0	1 x daily	65	2 degrees
19	24	4.0	1 x daily	70	2 degrees
20	25	4.0	1 x daily	70	1 degrees
21	20	4.5	1 x daily	75	1 degrees
22	22	4.5	1 x daily	75	1 degrees
23	24	4.5	1 x daily	75	1 degrees
24	25	4.5	1 x daily	75	0 degrees
25	20	4.5	1 x daily	80	0 degrees
26	22	5.0	1 x daily	80	0 degrees
27	24	5.0	1 x daily	80	0 degrees
28	25	5.0	1 x daily	80	0 degrees