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Who: 56-year-old active female s/p Right partial medial meniscectomy and peri-patellar chondroplasty.

What: 8 weeks post-op walking program was initiated in the AlterG Anti-Gravity Treadmill™.

Why: Weightbearing exercises caused medial tibiofemoral joint line pain and swelling. Patient was unsuccessful with stationary bike and elliptical trainer. AlterG allowed for more controlled loading progression for returning to Full Weight Bearing.

Introduction

The patient was a 56-year-old active female with long history of knee problems, most recently her right knee. An MRI found her right knee had a medial meniscus tear, underlying arthrosis, and a peri-meniscal cyst. She underwent elective right knee surgery. The procedure was a partial medial meniscectomy, a decompression of a peri-meniscal cyst, and a peri-patellar chondroplasty. Status post surgical diagnosis included: medial meniscus tear, cyst, grade 3 chondromalacia patella, grade 1 chondromalacia trochlea, grade 3 chondromalacia lateral tibial plateau, grade 1 chondromalacia lateral femoral condyle. The patient is active, exercises regularly, and works full time as an Acute Care Physical Therapy Assistant in a hospital.

Goals

- Minimal to no edema
- Progressively improve knee ROM and strength
- Return to work full duty
- Develop a normal gait pattern
- Return to a regular exercise program

History

Patient had a history of a left knee meniscal tear and surgery several years ago. The rehab had been slow, but successful. In the last year she fell several times due to other issues and had gradual onset of right knee pain. The pain became so great she was limited in work, gait, and ADL's.

She chose to have elective surgery for her right knee performed on 6/2/2010. She had postoperative pain and swelling and was therefore referred for

physical therapy. Her knee progressed slowly with non-weight-bearing exercises. One month after surgery she began weightbearing exercises in rehab and had a significant exacerbation of pain at the medial tibiofemoral joint-line with subsequent increased swelling. She was unsuccessful using the stationary bike and elliptical trainer due to increased pain. The MD was contacted and re-assessed her knee. He suggested taking rehab a little slower.

AlterG Case Study

The patient is a Physical Therapy Assistant in a hospital and is on her feet 8 hours a day. She helps to mobilize people out of bed and was concerned she wouldn't be able to tolerate the weight bearing stresses of her job. She also had time constraints for her rehabilitation, as she had to be back to work 3 months after the surgery. 8 weeks post-op, the patient initiated a walking program on the AlterG Anti-Gravity Treadmill. Initial setting was at 60% of her body weight, 1.5mph, no incline, for 5 minutes. The attempt was to try again to initiate weightbearing activities, but this time without increasing pain and swelling. She was pleased and successful in partial weight bearing with the AlterG without resultant pain and edema. Her rehab included gait training on the AlterG, soft tissue mobilization, knee range of motion activities, patellar joint mobilizations, knee/hip and ankle strengthening, work simulation activities and proprioceptive drills. Program duration was 3 months.

Considerations

Pain, soreness and swelling were considered when progressing ambulation on the AlterG. Speed and time were increased as patient's pain level improved. See table on back for progression.

Progression Table

Weeks	Program	Speed (mph)	Incline (%)	Time
Week 6	Walking at 60% of BW	1.5 mph	0	5 min
Week 8	Walking at 60% of BW	1.5 to 1.7 mph	0	15 min
Week 9	Walking at 65% of BW	1.5 to 2.0 mph	0	15 min
Week 9	Walking at 65% of BW	2.0 mph	0	20 min
Week 10	Walking at 75% of BW	2.0 mph	0	25 min
Week 11	Walking at 75% of BW	2.0 mph	0	25 min
Week 11	Walking at 80% of BW	2.0 mph	0	25 min
Week 12	Walking at 90% of BW	2.5 mph	0	30 min

Results

The patient was seen a total of 25 P.T. visits, 8 of them including the AlterG. The patient started with medial tibial-femoral joint line pain and significant re-occurring edema. The patient did achieve all her goals and has returned to work full-time and to full-duty as a Physical Therapy Assistant in a hospital on 8/23/2010. The AlterG Anti-Gravity Treadmill was incorporated midway through her rehab to try weightbearing activities again without the stress of her full weight (which had increased pain and swelling in rehab the first time) and to restore her normal gait. The AlterG was a successful component of her rehab because it allowed her to weight bear without pain. The patient walked on the AlterG 8 sessions and progressed her speed and time to increase

her weightbearing endurance for work. The patient was discharged 3 months post-op and able to return to work, walk without a limp, exercise regularly and have minimal to no edema. She is able to ambulate on even and uneven surfaces without difficulty.

The patient reports she felt the AlterG got her weight bearing again without pain and allowed her to start exercising again. The bike and elliptical had both caused her pain and hadn't been successful options. She reports being happy to have the AlterG as an alternative that allowed her to reduce her weightbearing to a comfortable level to allow walking and progression of her rehabilitation.

Progression Table 2

Days	Program (% Body Weight and Speed)	Speed (mph)	Frequency
<i>Week 42/10</i>	55% at 5.1 mph	10 min	1 x daily
<i>Week 43/11</i>	58% at 5.5 mph	10 min	1 x daily
<i>Week 44/12</i>	60% at 6.3 mph	10 min	1 x daily
<i>Week 45/13</i>	65-68% at 6.3 mph	10 min	1 x daily
<i>Week 46/14</i>	Pt out of town	10 min	1 x daily
<i>Week 47/15</i>	68% at 6.2 mph	10 min	1 x daily
<i>Week 48/16</i>	68% at 6.2 mph	10 min	1 x daily
<i>Week 49/17</i>	72% at 6.2 mph	10 min	1 x daily
<i>Week 50/18</i>	75% at 6.2 mph	10 min	1 x daily
<i>Week 51/19</i>	80% at 6.2 mph	10 min	1 x daily
<i>Week 52/20</i>	80-85% at 6.5 mph	10 min	1 x daily
<i>Week 53/21</i>	80-90% at 6.5 mph	20 min	