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Who: 65 year-old active female with long history of left knee pain and Osteoarthritis, elected for left Total Knee Arthroplasty (TKA) to address symptoms and improve quality of life.

What: 18 days post-op walking program was initiated on the AlterG[®] Anti-Gravity Treadmill™.

Why: Body weight support was used early on in the rehabilitation process to normalise gait mechanics and increase patient's confidence in ambulating without and assistive device. The AlterG allowed the patient to progress in a controlled, fall safe environment.

Introduction

65 year-old active female with long history of left knee pain from osteoarthritis that was progressively becoming worse and limiting her activity level. She underwent elective left total knee arthroplasty. Prior to surgery, the patient was doing aquatic exercises 3 times per week, and working out with a personal trainer for upper body strengthening twice a week.

Goals

- Increase left knee range of motion (ROM) to functional levels to assist with gait and activities of daily life (ADL).
- Tolerate standing to participate in ADL's.
- Tolerate ambulating x 20' on level surfaces without an assistive device.
- Tolerate ambulating up/down 3 steps.
- Tolerate squatting to knee high surfaces.

History

The patient had long history of left knee osteoarthritis and pain which was getting worse and limiting daily activity. Developed increased left knee pain after a fall 2 years ago.

Consulted with doctors and had a course of physical therapy which provided relief for approximately a year. When symptoms increased and icing and exercises did not provide relief, the patient elected to undergo left total knee arthroplasty.

She underwent 3 days of inpatient care, followed by 5 days of inpatient rehabilitation, then started outpatient rehabilitation. She initially had significant pain and stiffness in the left knee, especially medially. At initial evaluation, the patient's left knee PROM was: flexion = 93 degrees, extension= -3 degrees. The patient was ambulating with a front wheeled walker.

18 days post-op, the patient initiated a walking program on the AlterG Anti-Gravity Treadmill at 50% of her body weight at 2.0 mph and no incline. The protocol included gait training (on the AlterG), soft tissue mobilisation, stretching, strengthening for the core and left lower extremity, and proprioception drills. The program duration was 6 weeks.

Considerations

Any increase in symptoms were considered when progressing ambulation on the AlterG. Speed, and body weight were increased as patient's pain level improved

Results

The patient was seen twice per week for 6 weeks. The patient started with increased left knee pain and stiffness that was monitored during her rehab. The patient did achieve all of her goals and has returned back to an exercise program and walking with her husband after dinner.

The AlterG Anti-Gravity Treadmill was incorporated early in the rehabilitation program as a way to restore her normal gait and increase her confidence when ambulating without an assistive device.



AlterG Case Study

The AlterG Anti-Gravity Treadmill also allowed the patient to progress in a safe environment and by unweighting her, she was symptom-free during her gait training sessions. The patient walked on the AlterG twice per week and progressed her time, speed and increased her body weight to focus on returning to ambulating unassisted. The patient was discharged after 2.5 post-operative months. She was able to return to ambulating outside on varying terrain up to 40 minutes in duration and joined a gym to continue with an exercise program.

Weeks	Program	Speed (mph)	Incline %	Time (mins.)	Frequency
3	Walking at 50% of body weight	2.0	0	10	Twice per week
4	Walking at 60% of body weight	2.0	0	10	Twice per week
5	Walking at 70% of body weight	2.0	0	15	Twice per week
6	Walking at 70-75% of body weight	2.5	1	15-18	Twice per week
7	Walking at 75-80% of body weight	2.8	1	20	Twice per week
8	Walking at 80-85% of body weight	3.0	1	20	Twice per week

