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IMPROVEMENTS IN PHYSICAL FUNCTIONAL PERFORMANCE TEST 10 (PFP-10) IN AN AMPUTEE FOLLOWING CONTRALATERAL TOTAL KNEE ARTHROPLASTY



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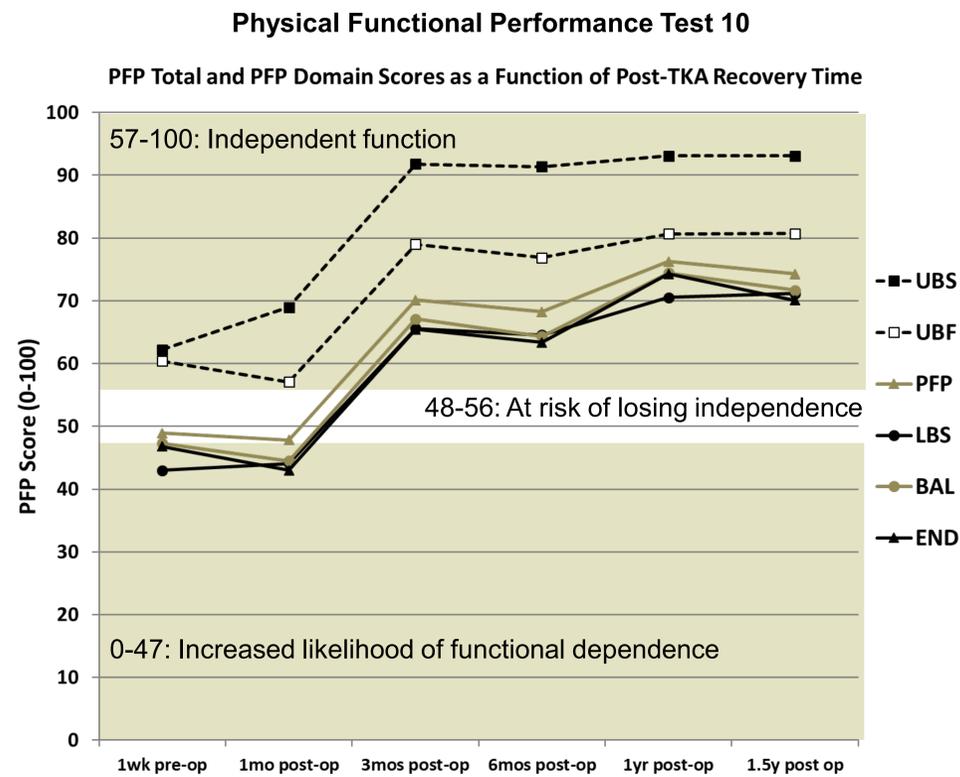
BACKGROUND AND PURPOSE

- Over 300,000 people are living with transfemoral amputations (TFA) in the United States (U.S.). There are growing concerns that overuse of the contralateral limb could lead to excessive chronic knee pain and osteoarthritis (OA). In the U.S., excessive chronic knee pain and OA can result in a total knee arthroplasty (TKA). Currently there is no reported cases which demonstrates the effect of physical therapy management on patients with TFA who also have had a contralateral TKA. The purpose of this case report is to present functional outcomes following a 16-week physical therapy intervention for a TFA with a total knee arthroplasty of the contralateral limb.

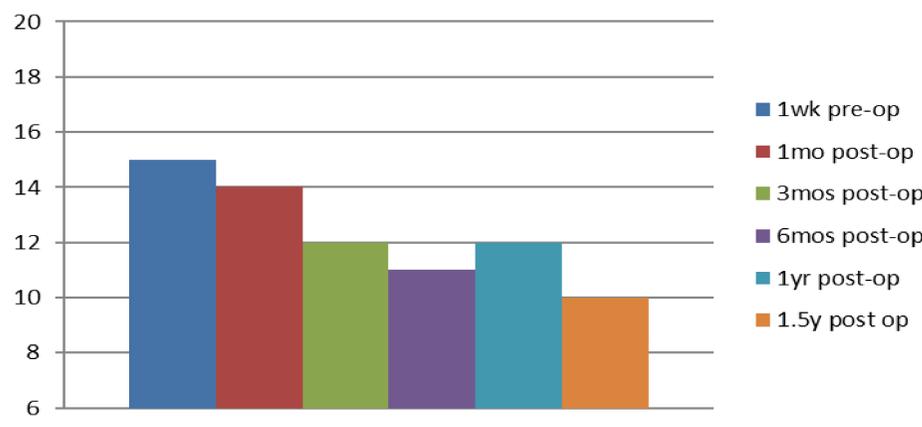
CASE DESCRIPTION

- 56y male, 3 years post right TFA, presented with severe left knee pain, decreased left knee active and passive range of motion, impaired gait and limited functional activity due to left knee OA.
- The subject underwent a left TKA to restore function.
- Post-surgery, the subject received physical therapy for 18 visits over a 6-week period focusing on transfer training, bilateral upper and lower extremity strengthening, ROM and pre-gait training.
- The following 12 visits over 6 weeks focused on lower extremity strengthening, ROM using ASTYM methods, postural exercises, gait and core and overall body strengthening.
- The last 8 visits, over 4 weeks focused on advanced levels of core strengthening, balance, gait, and an advanced atypical strengthening protocol to match the subject's high activity athletic goals.
- The subject entered a wellness program supervised by the treating physical therapist for 6 months.

OUTCOME MEASURES



Borg's Rate of Perceived Exertion on PFP



	1wk pre-op 2/7/2014	1mo post-op 3/28/2014	3mos post-op 6/25/2014	6mos post-op 8/26/2014	1yr post-op 02/01/2015	1.5y post-op 09/23/2015
PFP	48.9	47.8	70.1	68.25	76.26	74.30
UBS	62.2	69	91.8	91.39	93.11	93.11
LBS	43	44.1	65.6	64.56	70.55	71.14
UBF	60.4	57.1	79	76.87	80.69	80.72
BAL	47.3	44.5	67.1	64.35	74.44	71.69
END	46.8	43	65.42	63.35	74.28	70.05
RPE	15	14	12	11	12	10

RESULTS

- CS-PFP-10 test was administered one week preoperative as well as one, three, six, twelve and eighteen-month post-operative TKA. The patient received skilled physical therapy and progressed to a supervised wellness program focusing on strength, balance, coordination and endurance. The skilled physical therapy lasted six months and supervised wellness up to one-year post surgery. One week preoperatively, three of five domains were at *Increased likelihood of functional dependence*, while two domains and PFP total were scored at the low end of *at risk of losing independence*. Following the one year of skilled physical therapy and supervised wellness program, all five domain scores as well as the total score were at the 70-95 range.

DISCUSSION

- Due to the abnormal stresses placed on the sound limb during gait activities, a patient with a transfemoral amputation may develop early onset sound side OA. There is a dearth of evidence on unilateral LEA confounded by sound side TKA. There is a need for research in this population due to an increase in unilateral LEA and the need to develop a standard of care for optimal outcomes. A motivated patient with a LEA and sound side TKA can benefit from skilled physical therapy in terms of potentially attaining maximal functional independence with ADLs. Physical therapy should focus on rehabilitation for the TKA, but also must incorporate core strengthening, balance, coordination and endurance in order to improve physical functional performance to maintain

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