AB0881 COMPARISION OF FUNCTIONAL OUTCOMES BETWEEN PRIMARY AND REVISION TOTAL KNEE ARTHROPLASTY

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Background: Total knee arthroplasty (TKA) is the gold-standard treatment for end-stage knee osteoarthritis (OA). An increase in the prevalance of primary and revision TKA is projected due to aging of the population, increase in the obesity and OA prevalence, patients' quality of life perceptions and primary TKA procedures. Although TKA reliably improves pain and function; gait ability and function are still low compared to normal levels [1]. It is important to understand the prognosis to decide to undergo a rTKA (revision total knee arthroplasty) or enhance treatment protocols [2].

Objectives: The aim of the study is to compare the functional results of primary and revision TKA.

Methods: Hospital Of Special Surgery knee score (HSS), The Figure-Of-8 Walk Test (F8WT), The Modified Four Step Square Test (mFSST) and the 3-Meter Backwards Walk Test (3MBWT) were used for function assessment.

Table 1. Characteristics of the patients

	TKA	rTKA	p
HSS	83.00 (74.00-90.00)	78.50 (68.75-90.25)	0.179
Age-years	65.00 (57.00 – 70.25)	69.00 (59.50-75.75)	0.178
BMI-kg/cm^2	30.90 28.41 -34.65)	31.61 (25.54-36.41)	0.748
Time after surgery-years	2.00 (1.50-4.25)	3.00 (2.00-6.50)	**0.038**
Female	25 (80.6 %)	20 (69.0 %)	0.296
Male	6 (19.4 %)	9 (31.0 %)	
Pain	0.00 (0.00-0.00)	0.00 (0.00-0.75)	0.127

*p<0.05

Table 2. Functional Performances Of The Patients

	TKA	rTKA	P
3MBWT	6.2 (3.80-8.69)	7.68 (6.10- 11.25)	**0.042***
mFSST	10.20 (9.00-12.98)	13.10 (11.25-15.07)	**0.001***
F8WT	6.23 (4.74-8.6)	9.11 (7.15-12.05)	**0.001***

*p<0.05

Conclusion: Functional status, fall risk, balance and walking skills of the rTKA patients were lower than the TKA patients. rTKA patients experience longer operation time, hospital stay and make fewer functional gains. Improvement after rTKA is also reported to be lower than TKA and balance could be worsened or does not improve after TKA [2].

Walking skills of the rTKA patients were worse than the TKA patients which may cause rTKA patients to be more cautious and tentative due to fear of falling and failure of the implant leading a more impaired function [2]. rTKA patients' balance was lower and had more fall risk than the patients with TKA. These may be due to the recurrent incision of soft tissues causing a loss of more mechanoreceptors and a greater impairment of proprioception. These findings can help clinicians to make a more informed decision for both primary and revision procedures [3].

References:

[1] Jiang Y, Sanchez-Santos MT, Judge AD et al. Predictors of Patient-Reported Pain and Functional Outcomes Over 10 Years After Primary Total Knee Arthroplasty: A Prospective Cohort Study. J Arthroplasty 2017; 32: 92-100.e102.

[2] Vincent KR, Vincent HK, Lee LW, Alfano AP. Inpatient rehabilitation outcomes in primary and revision total knee arthroplasty patients. Clin Orthop Relat Res 2006; 446: 201-207.

[3] Wodowski AJ, Swigler CW, Liu H et al. Proprioception and knee arthroplasty: a literature review. Orthopedic Clinics 2016; 47: 301-309.

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AB0882 RELIABILITY OF THE 3-M BACKWARDS WALK TEST IN PATIENTS WITH REVISION TOTAL KNEE ARTHROPLASTY

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Background: Total knee arthroplasty (TKA) is an effective treatment for patients suffering from end-stage osteoarthritis with 10- to 15-year implant survivorship rates exceeding 90%. Infection, osteolysis due to polyethylene wear, loosening, stiffness and instability may cause to implant failure and revision of the TKA (rTKA). However, up to 20% of patients continue to have postoperative pain, functional limitations and low treatment satisfaction and 24% of patients were not able to walk unaided with no limp or a slight limp after TKA [1].

Falls and related traumas can produce "fracture, dislocation, crushing, and other injuries" [2]. Falls often occur due to impaired physical function which includes changes in lower knee joint angle, weakened lower limb muscles, peripheral nerve blockade, deformity of the foot limited balance and gait.

Several measures of fall risk have been previously developed however, recent research has demonstrated that backwards walking is more sensitive at identifying changes in mobility and balance compared to forward walking. Backwards walking is necessary to perform such tasks as backing up to a chair, opening up a door or getting out of the way of a sudden obstacle.

3-M Backwards Walk Test (3MBWT) is used to evaluate walking skills, fall risk and dynamic balance. The 3MBWT demonstrated similar or better diagnostic accuracy for falls in the past year than the most commonly used measures and found to be reliable in healthy subjects. [3] However, its reliability in rTKA has not been investigated.

Objectives: The purposes of this study were to determine the test-retest reliability and the minimal clinically important difference (MCID) of the 3MBWT in patients with rTKA

Methods: Twenty-two patients with rTKA, operated on by the same surgeon, were included. For the 3MBWT, a distance of 3 meters was marked with tape and participants were asked to align their heels with the black tape. They were instructed to walk backwards as quickly. Patients performed trials for 3MBWT twice on the same day. Between the trials, patients waited for an hour on sitting position to prevent fatigue.

Results: The 3MBWT showed an excellent test-retest reliability. Intraclass correlation coefficient ICC for 3MBWT was 0.97. The standard error of measurement and MCID at the 95% confidence level for 3MBWT were 1,08 and 2,99 respectively.

Conclusion: The 3MBWT has an excellent test-retest reliability in patients with rTKA. It is an effective and reliable tool for measuring fall risk, dynamic balance and walking skills. As a clinical test, the 3MBWT is easy to score, has no cost, needs no special equipment and can be applied in a short time as part of the routine medical examination.

References:

[1] Shan L, Shan B, Suzuki A et al. Intermediate and long-term quality of life after total knee replacement: a systematic review and meta-analysis. JBJS 2015; 97: 156-168.

[2] Johnson RL, Duncan CM, Ahn KS et al. Fall-Prevention Strategies and Patient Characteristics That Impact Fall Rates After Total Knee Arthroplasty. Anesthesia & Analgesia 2014; 119: 1113-1118.

[3] Carter V, Jain T, James J et al. The 3-m Backwards Walk and Retrospective Falls: Diagnostic Accuracy of a Novel Clinical Measure. J Geriatr Phys Ther 2017.

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AB0883 RELIABILITY OF THE MODIFIED FOUR SQUARE STEP TEST IN PATIENTS WITH REVISION TOTAL KNEE ARTHROPLASTY

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Background: Patients with total knee arthroplasty (TKA) often experience pain and reduced balance control, which may predispose them to greater fall risk. The patients with revision total knee arthrooplasty (rTKA), have more pain, stiffness and physical dysfunction and less postoperative improvement compared to the patients with TKA [1]. Falls in people with gait or balance disorders have significant consequences. Fear of falling can also predispose people to inactivity, which can lead to problems of debilitation, increased handicap, and disability by itself. Most of the falls take place in the course of movement, and the trips and slips were determined as the most common cause of elderly falls. Trips are responsible of falls between 40% to 60% and slips between 10% to 15%, showing that the capability to take a quick step would prevent many falls [2]. Literature has found stepping speed to the different directions declines with aging and are lesser for fallers than for nonfallers [3].

Modified four square step test (mFSST) was developed to assessing fall risk and dynamic balance by scoring time while participants stepping in multiple directions but its reliability has not been investigated in patients undergoing rTKA.

Objectives: The aims of this study were to determine the test-retest reliability and the minimal clinically important change (MCID) of the mFSST in patients with rTKA

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