Check for updates

Post-Operative Use of the Knee Walker After Foot and Ankle Surgery, A Retrospective Study

Jane Yeoh, MD FRCSC, David Ruta, MD, G. Andrew Murphy, MD, David Richardson, MD, Susan Ishikawa, MD, Benjamin Grear, MD, Clayton Bettin, MD

Category: Ankle,Hindfoot,Midfoot/Forefoot,Trauma,Assistive devices, Post-operative

Keywords: knee walker, knee roller, knee scooter, assistive device, post-operative, falls

Introduction/Purpose: Patients use assistive devices to mobilize during periods of non- or partial- weight bearing after lower extremity surgery or injury. The wheeled knee walker has grown in popularity, but there is a paucity of literature about this assistive device. The goal of this study is to quantify and describe patient use of knee walkers after foot and ankle surgery in the group practice of foot and ankle surgeons at multiple sites and a single institution. Primary endpoints include occurrence of falls, frequency of falls, and injury. Secondary endpoints include patient demographics (gender, age, BMI), comorbidities, knee walker characteristics, duration of use, and satisfaction in this population. This study also attempts to determine if any associations exist between knee walker-related falls and the above-mentioned factors.

Methods: We performed a retrospective, observational and descriptive study examining the use of knee walkers in adult patients after a foot and ankle surgery. Inclusion criteria were patients =16 years with unilateral foot and ankle surgery, physician-instructed non-weight bearing status, and given the option of using the knee walker from March 2015 to April 2016. With institutional review board approval, paper and electronic surveys were sent to 691 patients. Informed consent and data were collected from June 2016 to January 2017. Using the survey, we collected information on knee walker characteristics, duration of use and payment of knee walker, occurrence and frequency of falls, adverse events, satisfaction and recommendation for or against the use of knee walker. We performed a chart review to obtain demographic data and comorbidities. To determine association between falls and factors collected, Pearson Chi-Square analysis was utilized for discrete variables and Independent samples T-Test for continuous variables.

Results: 79/671 participants responded (12% response rate). The average age was 53.9±13.7years (range:17-85) and average BMI 30.7±5.9kg/m2 (range:18.2-48.9). 35/78(45%) participants had =3 comorbidities. Most used a steerable, 4-wheeled knee walker [74/76(96%) steerable, 66/76(87%) 4-wheeled]. Respondents used knee walkers on average 6.9±5.3weeks and 5.7±3.8hours/day. Two-thirds [51/76(67%)] did not receive instruction on usage of the knee walker. 32/73(44%) fell while using the knee walker, and nearly two-thirds [20/31(65%)] of those who fell reported multiple falls. 64/74(86%) participants were satisfied, 2/74(2.7%) felt neutral and 8/74(11%) were dissatisfied with the knee walker. 15/27(56%) male compared to 16/45(36%) female participants reported falling (p=0.097). There was no statistical association between falls and age, falls and BMI, or falls and =3 comorbidities. 30/32(94%) participants who fell still reported satisfaction with the knee walker.

Conclusion: To our knowledge, this is the first study reporting on wheeled knee walker usage in a clinical population. A significant portion (44%) of knee walker users experienced falling, and nearly two-thirds (65%) of those who fell experienced multiple falls. Despite these rates of falling, there were high satisfaction rates overall (86%), and among those who fell (94%). We did not find statistical association between falls and risk factors collected. This institution currently has an ongoing prospective knee walker study to examine knee walker usage and characteristics, patient factors, adverse events and the association between adverse events and possible risk factors.

Foot & Ankle Orthopaedics, 2(3)
DOI: 10.1177/2473011417S000419
©The Author(s) 2017

This open-access article is published and distributed under the Creative Commons Attribution - NonCommercial - No Derivatives License (http://creativecommons.org/licenses/by-nc-nd/3.0/), which permits the noncommercial use, distribution, and reproduction of the article in any medium, provided the original author and source are credited. You may not alter, transform, or build upon this article without the permission of the Author(s). For reprints and permission queries, please visit SAGE's Web site at http://www.sagepub.com/journalsPermissions.nav.