

Total Knee Arthroplasty in Patient above 95 Years Old: A Case Report

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Abstract

With increasing longevity, more patients older than age 95 in Middle East now are becoming candidates for total knee arthroplasty. Total Knee Arthroplasty (TKA) in the elderly population is becoming increasingly prevalent. This study aimed to assess the outcomes of TKA in patients aged >95 years in Middle East, and their post-operative outcomes. Total knee surgery can be performed safely in patients older than 95 years old with excellent pain relief and enhanced quality of life. The surgeon should be aware of the patient's past medical history because this predisposes to postoperative morbidity. To the best of our knowledge, there are no reports of TKR in patients above 95 years old in the current literature. This case provides valuable insight into the feasibility and success of TKR in this age group.

Keywords: Arthroplasty • Osteoarthritis • Joint replacement • total knee replacement.

Introduction

Osteoarthritis (OA) is a highly prevalent joint disease that is associated with pain, loss of function, and high direct and indirect economic costs. The current therapeutic options are inadequate, providing only a moderate symptom relief without the possibility of disease modification [1].

One of the promising treatment for painful knee osteoarthritis with reduced function and quality of life is total knee replacement. Knee replacement surgery is one of the most commonly done and cost-effective musculoskeletal surgical procedures. The numbers of cases done continue to grow worldwide, with substantial variation in utilization rates across regions and countries [2].

Total Knee Arthroplasty (TKA) results in a high degree of patient satisfaction, as it provides patients with considerable medium- and long-term benefits in terms of quality of life, pain relief and function [3]. The

Oxford Knee Score (OKS) is a validated and widely accepted disease-specific patient-reported outcome measure. The OKS is widely accepted as a reliable and valid measure of outcome after knee replacement and exhibits superior reliability and validity to similar outcome measures in terms of response rate and ease of use [1]

By 2041, 30.2% of Saudi Arabia's population will be aged 75 years or older. With similar trends of population aging worldwide, the prevalence of Total Knee Arthroplasty (TKA) being performed in elderly patients can be expected to increase. Because little data exist about the safety or efficacy of total knee replacement in this elderly population in middle east, some physicians may be hesitant to recommend elective surgery to patients of this age (Figure 1). TKA is a safe and efficacious procedure for the elderly. More severe complications, longer length of stay and smaller gains in functional improvement can be expected in the elderly as compared to younger patients.

To the best of our knowledge, there are no reports of TKR in patients above 95 years old in the current literature. This case provides valuable insight into the feasibility and success of TKR in this age group [4].

Case Presentation

97-year-old female, known case of dyslipidemia and gastritis on medication. She had a history of left total knee replacement on December 2017; moreover, she underwent ERCP and laparoscopic cholecystectomy on September 2021.

A patient presented in our clinic complaining of chronic right knee pain and limitation of movement which affects her lifestyle activity several years ago. On examination, she has right anterior knee pain with medial joint line tenderness and mild right knee effusion. Her right knee range of motion from 10 degrees up to 110 degrees with attenuated lateral collateral ligaments. In addition, she has varus deformity recognized and her neurovascular examination was intact. Patient prepared for surgical procedure. Her laboratory investigation, ECG and chest x-ray were within normal range. The patient follows up after 2 weeks, 1 month, 3 months, 6 months and finally 1 year. Oxford knee score is used to evaluate her knee pain.



Figure 1. Pre-operative view: X-ray shows advanced knee OA



Figure 2. Post-operative view: Shows patient's right knee TKR

Management

Based on that patient underwent an eventual right total replacement on August 2022. In spite of her age, patient was able to walk partial weight bearing with walker frame assistance on the same day of operation. 2 weeks later, clips were removed and her wound was healed completely with no sign of infection or discharge. Her right lower limb was well aligned with mild knee effusion her right knee range of motion is from 0 degrees up to 90 degrees. 1-month after the surgery, patient presented to the clinic full weight bearing walking with one cane assistance and she was happy and satisfied regarding her situation. A good outcome was observed using oxford knee scale during the follow-up at 3 months and 6 months and at 1 year. This outcome is likely due to the successful replacement of the damaged knee joint with an artificial joint, resulting in improved mobility, reduced pain, and increased quality of life.

At the 3-month follow-up, the patient demonstrated good knee range of motion, was able to bear weight on the operated leg, and reported significant pain relief. At the 6-month follow-up, the patient continued to experience improved mobility and pain relief, with no major complications reported. Overall, TKA can be a successful intervention for older adults with severe knee osteoarthritis, including those over 95 years old, and can lead to improved quality of life and mobility. At the 1-year follow-up visit after undergoing Total Knee Arthroplasty (TKA), the 97-year-old patient continued to demonstrate a positive outcome. The patient reported sustained pain relief, improved mobility, and a better quality of life compared to pre-surgery. The range of motion of the knee joint remained good, with no signs of joint instability or stiffness. The patient was able to perform daily activities with greater ease, such as walking, standing, and climbing stairs, which were previously difficult due to severe knee osteoarthritis. The patient reported no complications related to the surgery and had not experienced any implant-related issues.

Discussion

TKR has been described as safe and effective in elderly patients. TKR in elderly is not reported in previous studies with successful outcomes in Middle East. A study by Pagnano and colleagues involving 41 patients ≥ 90 years of age with multiple medical problems found that the 34 patients who underwent primary TKR experienced improvement in Knee Society pain scores, which increased from an average of 30 points preoperatively to an average of 86 points at a mean of 3.9 years of follow-up ($P < .01$) [5].

Another study reported 62 unilateral total knee replacements performed in patients older than 85 years of age followed up for a minimum of 2 years. More than 85% of the older patients could travel independently to socialize and shop after surgery. 76% of the patients were living independently or in senior retirement housing after surgery. Only two of the patients required living accommodations in a nursing home. One third of the patients still could drive their own car after surgery. Quality of life improvement was markedly increased in this elderly group of patients. The results of this study indicate that total knee replacement still is a valuable procedure even for this elderly group, and most of these patients returned to a more functional Lifestyle [6].

Another study was performed to review the reliability, durability, and safety of primary and revision total knee arthroplasty for patients 90 years of age and older. Because little data exist about the safety or efficacy of total knee replacement in this elderly population some physicians may be hesitant to recommend elective surgery to patients of this age. Fifty-one total knee replacements were done for 41 patients age 90 years to 102 years (mean, 92 years). Forty-four primary total knee replacements and seven revision total knee replacements were done. The Knee Society pain scores improved significantly for the primary and revision groups from preoperative mean scores of 30 points and 29 points to latest follow-up scores of 86 points and 87 points, respectively. Total knee replacement was reliable, durable, and safe in this group of patients older than 90 years (Figure 2). Primary care physicians and surgeons should be aware that primary and revision total knee replacement can be done safely and effectively for patients 90 years and older and result in years of marked pain relief for those patients [7].

The purpose of our case report is to document the successful TKR outcome in a patient over 95 years old, which is a rare occurrence in the current literature. By publishing this case report, we hope to provide valuable information and insights that can be used as a citation for healthcare professionals and researchers who are interested in the topic. This case report can help inform future research on TKR in older adults and potentially inspire similar successful interventions in this age group [8].

Conclusion

The successful outcome of the TKR procedure in the aforementioned patient, as demonstrated through 2 weeks, one -month, 3-month, 6-month, and one-year follow-up visits using oxford knee scale for assessing is promising. Total knee surgery can be performed safely in patients older than 95 years old with excellent pain relief and enhanced quality of life. The surgeon should be aware of the patient's past medical history because this predisposes to postoperative morbidity.

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