Outcomes of Cementless Total Knee Arthroplasty in Rheumatoid Arthritis Patients

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Introduction

- RA patients have a proliferative synovitis
- Newer cementless implants: improvements in fixation and longevity
- Concern of cementless fixation in RA patients
- Inc. unmineralized tissue + resorptive activity → osteoporosis
- NSAIDs, corticosteroids, methotrexate: impede biologic fixation into porous-coated implants
- Suboptimal biologic bond between the bone and metal
- Potentially increased risk of loosening, wear, and poor long-term results

Objectives

- In a large series of RA patients with newer generation cementless TKAs, assess:

1. Implant survivorship
2. Clinical outcomes
3. Post-operative complications
4. Radiographic outcomes

Methods

- All consecutive RA patients during June 2008 and 2014
- Implant Details
  - –Cementless, beaded, Periapatite-coated (PA) femoral component and cobalt-chrome tibial baseplate
- Surgical Technique
  - –Synovectomy was not performed
- Clinical Evaluation
  - –6 weeks, 3 months, annually
  - –ROM, KSS pain and function, survivorship, complications
- Radiographic Evaluation
  - –Radiolucencies, reactive changes, and implant subsidence at regular clinic visits

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Methods

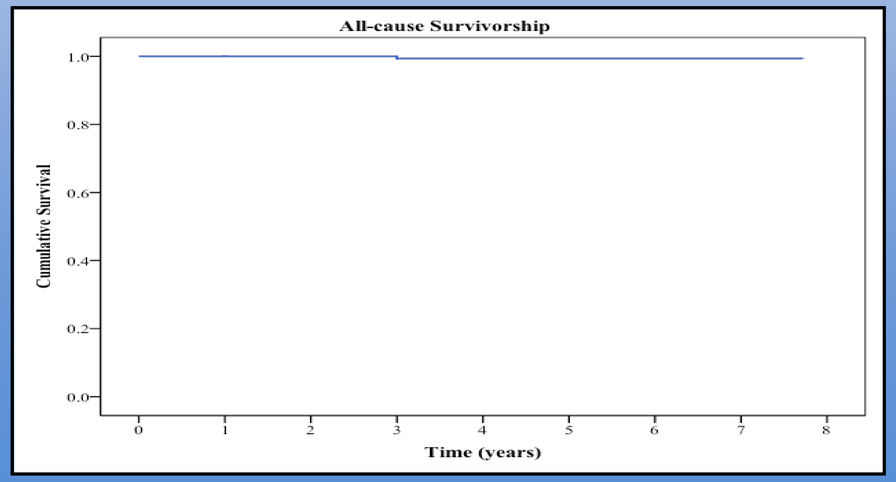
Table 1. Patient Baseline Characteristics

	n (%)
Total (TKAs)	126
Total patients	122
Mean age (range)	67 (47 to 86)
Gender	
Male	34 (29)
Female	88 (71)
BMI (kg/m^2)	33 (20 to 52)
Mean follow-up in years (range)	4 (1 to 8)

Results

- Implant survivorship
  - –Overall implant survivorship was 99.2% at final follow-up
  - – One failure was an aseptic subsidence of a tibial component

Figure 1. Kaplan-Meier curve demonstrating all-cause survivorship (99.2% at mean 8 years follow-up) of the cementless TKA implant.



Results

- Clinical Outcomes
  - –At final follow-up, the mean knee extension was 2º (range, 0 to 10)
  - –Mean knee flexion was 124º (range, 95 to 140)
  - –Mean KSS pain score was 92 points (range, 80 to 100 points)
  - –Mean KSS function score was 84 points (range, 70 to 90 points)

Table 2. Post-operative range-of-motion and clinical outcomes.

	Post-operative Mean (range)
Range-of-motion (degrees)	
Extension	2 (0 to 10)
Flexion	124 (95 to 140)
Knee Society Score (KSS)	
Pain	92 (80 to 100)
Function	84 (70 to 90)

- Post-operative Complications
  - –No surgical complications
  - –2 medical complications (0.8%): 1 PE, 1 MI
- Radiographic Outcomes
  - –No radiolucencies, loosening, or subsidence

Discussion

- Newer generation cementless implants improved outcomes
- 99.2% survivorship in high-risk RA patients
- Excellent functional outcomes and ROM
- No adverse radiographic findings

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