Return to Golf in a 71-year-old Female after a Mako Robotic-Arm-Assisted Unicompartmental Knee Arthroplasty: A Case Report

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Background & Purpose
- Knee osteoarthritis (OA) is the most common joint disorder in the elderly.†
- Unicompartmental knee arthroplasties (UKA) have been increasing in prevalence at a rate of 30% each year.‡
- Robotic-arm-assisted UKAs increases the accuracy of implant positioning compared to traditional techniques which helps with a quicker recovery.†
- Little literature on UKAs, but total knee arthroplasty (TKA) is the gold standard for OA in the elderly.§

Case Description
- 71-year-old female one-week status post (R) UKA with Mako robotic-arm-assist.
- OA in bilateral knees and ankles.
- Prior to surgery she lived independently and was active through golfing, gardening, and biking.
- Upon initial evaluation (IE) pt presented with decreased range of motion (ROM), strength, patellar mobility, balance, and increased pain.

Incision
- R UKA surgery performed.
- Home Health PT IE and discharge
- Surgery & Home Health Day 0-7

Timeline
- Place fell through her deck
- Strengthening regressed
- Patellar mobilizations progressed
- Increased edema
- ROM continued
- Week 1 and 2
- Outpatient PT IE & HEP initiated
- Strength and ROM exercises initiated
- Patellar mobilizations initiated

- Week 3 and 4
- Pt fell while gardening
- Strengthening continued
- ROM and patellar mobilizations continued

- Week 5
- Balance and dynamic movement progressed
- Strengthening and ROM progressed

- Week 6
- Pt self discharged from PT (9 weeks post operatively)
- Planned to play 9 holes of golf in 3 weeks (12 weeks post operatively)

- Week 8
- Final discharge note 8 weeks post operatively

Outcomes
- Numeric Pain Rating Scale (0-10)
  - Current: 2
  - Best: 0
  - Worst: 3
- Lower Extremity Functional Scale
  - 31/80, 61.25% disabled
  - 30/80, 26.25% disabled
- Goniometric
  - ROM (knee extension/ flexion- extension): L: 3-135 degrees
  - R: 8-111 degrees
- Manual Muscle Testing
  - R hip flexion: 4/5
  - R hip abduction: 5/5
  - R hip adduction: 5/5
  - R knee flexion: 4/5
  - R knee extension: 4/5
  - R ankle dorsiflexion & plantarflexion: 5/5
- Patellar Mobility
  - R patella superior, inferior, medial, lateral glides all hypomobile
- Normal patellar mobility

Interventions
- Neuro-Re-Education
  - Balance
- Home Exercise Program
  - ROM
  - Strength
  - Education

Therapeutic Exercise
- ROM
- Strength
- Dynamic Movements

Manual Therapy
- Patellar mobilizations

Figure 1: Note the unique superior and inferior incisions caused by the Mako robotic-arm-assisted surgery.

Figure 2: Supine active knee flexion with strap assisted overpressure

Figure 3: Single leg stance static balance

Discussion & Conclusion
- This case report suggests that the combination of interventions used are beneficial to patient following a UKA.
- Despite two falls that set her back during treatment the pt demonstrated improvements in all outcome measures upon self-discharge.
- Further research should be completed on UKAs to determine best practice when treating this population.
- Research should be directed at comparing long term outcomes and recovery times of UKAs versus TKAs.

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References

Figure 4: Tandem stance static balance

Figure 5: Supine calf stretch with focus on knee extension